The early Bronze Age cemetery at Chalandriani on Syros (Cyclades, Greece)

Hekman, Jan Jakob

Chapter one

INTRODUCTION

Of all the Cyclades none is so bleak and barren as Syra,
yet this island possesses an attraction of her own,
and a curious history of modern development;
future ages will quote this little spot as the
brightest specimen of activity produced by the revival
of the long dormant spirit of independence in Greece.
J.T. Bent (1884, p. 304)

For centuries antiquarians and archaeologists have travelled through the Aegean studying its ancient remains. Although in the periods before the twentieth century such visitors were mostly interested in inscriptions and antiquities from the Classical era, some travellers also collected prehistoric finds.[1] Among these earlier scholarly visitors, who travelled extensively in the Cycladic archipelago and who showed an interest in its earlier history, we mention Ludwig Ross, Fernand Dümmler, and James Theodor Bent.[2] In various publications, both as articles in learned journals and in books, they presented a wealth of information on the earlier periods of these islands. Their topographical manner of collecting and of presenting numerous details present a real *Fundgrube* for any modern archaeologist investigating the ancient regions of the Greek and Roman world.

[1] A good example is the Dutch colonel B.E.A. Rottiers, who travelled through the Aegean on a mission for King Willem I of The Netherlands in search of antiquities to be transported to the newly founded Museum of Antiquities in Leiden. On Mykonos he acquired a group of marble objects, which were clearly from a destroyed prehistoric grave. The objects are described in Bastet (1982), I, 4-5, nos, 9-13, pls. 2-3. For details concerning Rottiers' travels in the Cyclades, see Bastet and Brunsting (1987).
[2] Ross (1840-43); (1855); Dümmler (1886); Bent (1884).

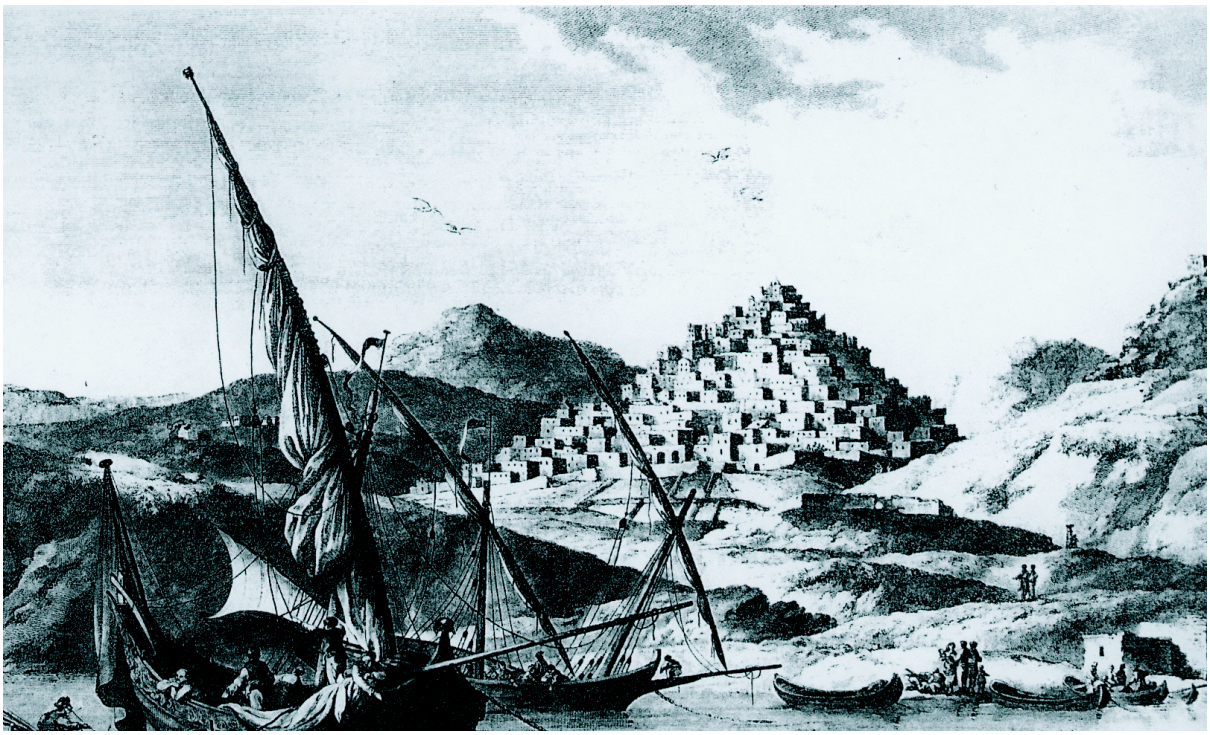

Figure 1. *View of the medieval town of Ano Syros in 1776 (after Choiseul-Gouffier, 1782)*

Always lacking, however, in these publications are modern standards of critical analysis and a firm understanding of the finer chronological details. Following in the footsteps of these historic topographers, many archaeologists and prehistorians have undertaken fieldwork on the Cycladic islands. Together these studies and researches yield an impressive database of the prehistoric and ancient periods in the Cyclades. Besides large scale archaeological projects, such as on Delos and Thera, many smaller investigations and field studies have also contributed to our present knowledge of the prehistoric and ancient periods in the Cyclades.

In travel books or antiquarian studies on Greece from before the early nineteenth century, references to Syros are generally rare, or at most extremely brief.[3] One of the reasons for this may be the fact that Syros is only scarcely referred to in ancient literary sources. Nearly all these references only mention Syros as the birthplace of the famous Archaic philosopher Pherekydes. The few other passages are very short and never mention specific historical or cultural topics.[4] In addition, there were no famous ancient monuments that were imperative to visit for those travelling

[3] See in general Eisner (1991), Kefallimiades (1989); Spencer (1986); Tselikas (1990); Tsgakou (1981; Van der Vin (1980)).

[4] Schibly (1986) has collected all references in ancient literary sources regarding the Archaic philosopher Pherekydes. Other references to Syros are found in Strabo X, 5, 8; Pliny *NH* IV, 67; Ovid, *Metamorphoses* VII, 563-64; Ptolemy, *Geographia* III, 15; schol. Dionysios, *Per.* 525; schol. Aristophanes, *Eirnini*, 363; see also *RE* s.v. Syros (by W. Zschietzschmann). The identification of the island of Syrie mentioned in Homer, *Od.* XV, 403-404 (GLD\0) with Syros is not accepted by most recent scholars, see Heubeck and Hoekstra (1989), 257.

Figure 2. *Map of Syros in the eigthteen century (after Tournefort, 1717)*

in the Aegean. Syros lay more or less literally in the shadow of the more widely known and much visited island of Delos with its extensive antiquities. An exception to this general neglect is found in a book on the practice of beekeeping by the Syriote bishop Della Rocca; the first part contains an extensive history of the island, including descriptions of some of its ancient remains.[5] A few scholars of the eighteenth century visited Syros and described its ancient remains or natural characteristics in their publications. Among these rare occasions are the visits by the Italian monk Christofo Buondelmonti, the French antiquarian comte Choiseul-Gouffier, the French botanist

[5] Abbé Della Rocca (1790), volume I. A xerox copy is kept in the library of the church of Ayios Georgios in Ano Syros. I thank the bishop of Ano Syros, Monsiegneur Fr. Papamanolis, for allowing me to make a copy of the first volume of this work containing a history of Syros.

Joseph Pitton de Tournefort, and the Dutch adventurer Pasch van Krienen.[6] This situation changed in the second quarter of the nineteenth century. The number of visitors, both with commercial and archaeological interests, increased considerably. The main reason for this growth lies in the fact that the newly founded town of Ermoupolis rapidly became one of the main ports in the Aegean. Its thriving harbour was at the crossroads of East-West and North-South trade routes in the eastern Mediterranean world.[7] In the trail of all these merchants, sea captains, and other entrepreneurs, came a large number of scholars interested in ancient remains. Traces of the ancient town of Syros were regularly encountered during the building activities of Ermoupolis. Several foreign visitors mention in their publications the presence of ancient remains.[8] Nowadays nearly all these are lost or built over.[9] Only a few finds from this late Classical to Roman town are exhibited in the local museum which was founded in 1843, one of the first of its kind in Greece. Besides archaeological finds from the island itself, this museum served as a depository for antiquities from other islands in the Cyclades (*e.g.* Amorgos, Thera, and Keos). A few other archaeological sites besides the ancient town of Syros were known on the island at that time. References to some of these appear sporadically in studies by scholars such as Ludwig Ross and K.G. Fiedler.[10] The attention of most foreign archaeologists in the second half of the nineteenth century was directed towards the major Classical sites on Thera, Delos, and Melos. Large-scale French, German, and British excavations were undertaken, some of which, as on Delos, continue up to the present day.

1.1. Prehistoric Cyclades

Prehistoric sites and finds were only occasionally studied during the eighteenth and nineteenth centuries. Hence the chronology from this time was largely incomplete. The extent of archaeological finds and scholarship was summarized at the end of the nineteenth century in several extensive studies, such as *Histoire de l'Art* by Perrot and Chipiez (1894) and the itemized lists of prehistoric finds in Greece by Blinkenberg (1896).[11] Pre-Hellenic ceramics from the Cyclades were also included in the studies on prehistoric and Mycenaean pottery by Furtwängler and Loeschcke.[12] The study of

[6] For the description of Syros by Buondelmonti, see Legrand (1897); Tournefort (1717); Pasch van Krienen (1773), but see also Ross (1860); other 18th and early 19th-century scholarly travels in the Aegean which included Syros are Choiseul-Gouffier (1782) and Bory de Saint-Vincent (1837-38).

[7] For details on the cultural and commercial growth of Ermoupolis in the 19th century, see Agriantoni (1983); Travlos and Kokkou (1986); Kardasis (1987).

[8] Early references to the remains of the ancient town of Syros below the present town of Ermoupolis may be found in Prokesch von Osten (1836-37), I, 61-65, II, 540-43; Ross (1840), I, 8-9, (1843), II, 25-27); LeBas (1888), 9-17, 26; Puckler-Moskau (1836), 274-79; Zolontas (1842); Bory de Saint-Vincent (1837-38), II, 477; Choiseul-Gouffier (1782), I, 48; Clarke (1823), VI, 149; Bory de Saint-Vincent, III, 15, 1 and 3; Stark (1874), 290-97; Riedesel (1802 [1774]), 89.

[9] Various details of the ancient town of Syros may possibly be discovered within the foundations of buildings in present day Ermoupolis, for instance remains of curved rows of seats of an ancient theatre are still visible in the basement of a Neoclassical house in the southern part of Ermoupolis, see Travlos and Kokkou (1986), 21, fig. 3 .

[10] Fiedler (1841); Ross (1843), 26-27; Stephanos (1875), 6-8; Ambelas (1875); Frangidis (1975).

[11] Perrot and Chipiez (1894); Blinkenberg, (1896). Other early manuals on Greek prehistory in which reference is made to the prehistoric finds from the Cyclades, especially from Syros, include Bossert (1921); Fimmen (1921), 14, 80ff; Glotz (1912); Hall (1915); Mosso (1910).

[12] Furtwängler and Loeschcke (1879); (1886).

the prehistoric period in the Cyclades gained a more solid footing in the final decade of the nineteenth century. After having worked for many years at various sites in Mainland Greece, both Classical and prehistoric, the Greek archaeologist Christos Tsountas turned his attention to the Cyclades. On the mainland, Tsountas had worked as *ephoros* of antiquities at Salamis, Eretria, Tanagra, Vapheio and other sites in Lakonia, Tyrins, and most importantly at Mycenae. In 1892 he published one of the first comprehensive surveys of the Mycenaean civilisation, later translated in an English edition with J.I. Mannatt.[13] Between 1894 and 1898 he excavated a large number of prehistoric sites on various Cycladic islands. Nearly all of these sites were cemeteries. In 1894 he went to Amorgos were he also excavated a number of cemeteries. A few years later he undertook two major campaigns on different islands. In 1897 he excavated on Paros, Antiparos, and Despotikon, and one year later on the islands of Siphnos and Syros. His report of these excavations constitutes the starting point of the study of the Early Cycladic culture. After his 'Cycladic campaigns' Tsounta directed his attention to the Neolithic sites in Thessaly. Here he undertook extensive excavations of the two key-sites of Sesklo and Dimini. Because of his still important publications and the systematic and thorough methods of his excavations in many parts of the Greek world he ranks as one of the founders of the study of Greek prehistory.

Since the time of the excavations by Tsountas in the Cyclades, over one hundred years ago, our knowledge and insightst into the Early Cycladic culture has considerably grown. Both large-scale excavations and many smaller field studies have contributed to a better understanding of the cultural relations, chronology, and cultural development of this part of the prehistoric Greek world. A few important contributions to the growth of scholarship of prehistoric archaeology may be singled out in order to understand current debates on cultural developments in the Cyclades.[14] For more than a century the British School at Athens has been conducting field work on the island of Melos. In the final years of the nineteenth century excavations were carried out at the Early Bronze Age cemetery at Pelos and at the later Bronze Age settlement of Phylakopi. At the latter site extensive settlement traces were encountered and investigated. The stratigraphic sequence of this site, in which several of the cultural phases of the earlier Bronze Age can be tied to specific superimposed layers, remains one of the few temporal anchors for further chronological analyses. At various times British archaeologists have returned to Melos to investigate its prehistoric remains.[15]

In the early years of the twentieth century the anthropologist Klon Stephanos, who first undertook archaeological research on Syros (see chapter 2), excavated many prehistoric graves on Naxos. He published only some sketchy descriptions of the graves and the finds. These grave groups were reconstructed and extensively published by G.A. Papathanasopoulos in 1961.[16]

[13] Tsountas and Mannatt (1903).

[14] More exhaustive surveys and overviews of Early Cycladic archaeology can be found in Barber (1987); Buchholz and Karageorgis (1973); Caskey (1971); Davis (1987); (1992); Doumas (1977b); (1988); (1994); Renfrew (1972); (1991).

[15] See Edgar (1896/97) on the Pelos material, which is currently being restudied and prepared for publication by R. Arnott; the first excavations at Phylakopi were published by Atkinson et al. (1904); results of later campaigns can be found in Dawkins and Droop (1910/11); Renfrew (1985). For a historical account of British and other archaeological research on Melos, see J.F. Cherry in Renfrew and Wagstaff (1982), 10-13.

[16] Short reports of the excavations of graves on Naxos were published by Stephanos in issues of the *Praktika* (1903); (1904); (1908); (1909); (1910); (1911); for a summary of his excavations on Naxos, see Stephanos (1905). For the reconstruction of many of these grave inventories, see Papathanasopoulos (1961/62).

In 1906 and later in 1914, R. Dussaud published extensive accounts of the prehistoric cultures of the Aegean world. A large part of his work was taken up by discussions of various aspects of the Early Cycladic culture.[17] Almost at the same time U. Kahrstedt published a study on the Early Cycladic culture in which he distinguished between two major cultural phases, based mainly on ceramic finds. The first, named after the cemetery at Pelos on Melos, was followed by a more developed phase named after the island of Syros with material from the cemetery at Chalandriani and the settlement at Kastri.[18] Several years later C. Dugas published two studies of the prehistoric and later ceramics from the Cyclades. He added another cultural phase to the two already identified by Kahrstedt and other. It consisted of types of artefacts associated with the first town at Phylakopi on Melos.[19] In a broad ranging series of studies on the prehistoric cultures of Greece and Italy, the Swedish archaeologist N. Åberg dealt extensively with the archaeological evidence from the Cyclades. On the basis of the available material, mostly pottery from excavated graves, he distinguished two main cultural phases in the Early Cycladic culture: an earlier Pelos phase and a later Syros phase.[20] These cultural phases remain an essential element in descriptions of cultural developments in the Cycladic Early Bronze Age up to the present day.

During 1930s to 1960s numerous prehistoric graves were excavated in the Cycladic islands, but also innumerable sites were destroyed by illicit digging, especially during the 1960s when Cycladic marble figurative art was highly desired among collectors. The destruction of the important Early Cycladic site on Keros is a sad example of this widespread loss of much archaeological information.[21] During the second half of the century, several influential excavations were carried out on a number of islands. Major Neolithic sites were excavated on two islands in the 1960s. On Keos J.L. Caskey and J.E. Coleman revealed the existence of a large Neolithic settlement and cemetery lying on the promontory Kephala, just north of the major settlement of Ayia Irini.[22] The site is one of the rare examples in which both the settlement and its cemetery have been excavated. The material culture displays many similarities with sites in Attica. The period of occupation at Kephala falls in the beginning of the fourth millennium BC. A small Neolithic settlement or campsite was excavated in 1964 and 1965 by J.D. Evans and C. Renfrew on the islet of Saliagos, lying between the coasts of Paros and Antiparos.[23] On account of both chronometric datings and typological parallels with similar ceramic types found elsewhere in the Aegean, the site is set in a period around the turn of the fifth to fourth millennium BC. Its characteristic material culture has also been found on several other locations in the Cyclades (*e.g.* Paros, Antiparos, Mykonos, and Melos). During successive years in the sixties and early seventies extensive excavation campaigns were carried out at the prehistoric settlement of Ayia Irini in northern Keos. Large parts of settlements from different periods were

[17] Dussaud (1906a); (1906b); (1914).
[18] Kahrstedt (1913).
[19] Dugas (1925).
[20] Åberg (1933), vol IV.
[21] New field work has recently been undertaken at the site of Kavos Daskaleio on Keros by a joint effort of Professors C. Doumas, L. Marangou and C. Renfrew in order to elucidate this enigmatic site from which such an enormous quantity of marble figurative artefacts was removed; see also Getz-Preziosi (1982) on the so-called Keros-hoard. For some preliminary details, see Renfrew (1991), 99-101.
[22] For the excavations at the Neolithic site at Kephala on Keos, see Caskey (1964); the results have been published in full by Coleman (1977a).
[23] Evans and Renfrew (1986).

investigated. Although the site was certainly inhabited during much of the Early Bronze Age, the most important remains date from the Middle and Late Bronze Age.[24]

In recent years several new investigations and excavations were started. On Amorgos excavations continue at the site of Markiani on the southwestern coast of the island. Here remains of an Early Bronze Age settlement have been revealed which include possible fortification walls. Another Early Bronze Age settlement is currently being excavated at Skarkou on the island of Ios.[25] This island is generally not well known for its prehistoric remains, although some prehistoric finds were reported in the beginning of this century.[26] A site which promises to add much detail to the inadequately understood chronology of the Late Neolithic-Early Bronze Age transition is located in the cave of Zas on Naxos.[27] All three sites have not yet been substantially published as investigations are still in progress. A few details are presented in a number of reports and articles. Another project which is expected to present important additions to our knowledge of the chronology and the culture of the Early Cycladic period is being carried out at the site of Daskalio Kavos on the small island of Keros. The island is well known as the findspot of the so-called 'Keros-hoard' of several hundreds of fragments of marble figurative art and two small excavated cemeteries. The context of these numerous marble objects still remains much of a mystery. Proposed interpretations range from disturbed graves to a (possibly Pan-Cycladic) sanctuary-site, all however without any substantiation from systematic fieldwork. These current investigations are therefore of great importance.[28]

Besides new excavations and studies of material from previous excavations, archaeological surveys have also added much detail to our knowledge of the prehistoric Cyclades. In the seventies a systematic survey was conducted on the island of Melos. In addition to a long list of new sites that were found, specific analyses of many kinds of evidence, both from the survey finds and from other sources, resulted in an integrated account of the socio-economic and political developments on Melos during the several millennia it has been inhabited up to the present day.[29] Another systematic archaeological survey was recently executed in the northern part of Keos. It comprised much of the *hinterland* of the major Bronze Age settlement of Ayia Irini.[30] The diachronic pattern of habitation in this area showed some contrasts with that derived from the survey on Melos. Whereas on Melos settlement numbers oscillated from few (nucleation) to many (dispersion) in different periods, in northern Keos settlement numbers were at almost all periods relatively sparse. The fact that both islands had an important and large central settlement during much of the prehistoric (and later)

[24] The results are currently being published in a series of monographs each dealing with a specific period of occupation or group of material; issues relevant to this study are published by Coleman (1977a); Wilson (1999).
[25] Preliminary details of this project led by Dr M. Marthari are found in *BCH* 109 (1985), 841; and *BCH* 111 (1987), 569; *AR* 31 (1984-85), 52 and *AR* 33 (1986-87), 49; Marthari (1990). A prehistoric settlement has also been reported near the cemetery at Chalara Manganariou, on the south coast of Ios.
[26] See Graindor (1904; 1921) on prehistoric cist graves reported at Manganari; the so-called Tomb of Homer, first reported by Pasch van Krienen, may actually have been another prehistoric cemetery, see Pasch van Krienen (1773), but see Ross (1860) for a thorough refutation of Van Krienen's claims; see also Bent (1885), 157; Constantine (1984), 215-18; Arnott (1990), 2; Crielaard (1995).
[27] Cave of Zas, Naxos: Zachos (1987).
[28] See above note 21.
[29] Renfrew and Wagstaff (1982).
[30] Cherry, Davis and Mantzourani (1991).

periods suggests that other (external) factors may have carried a strong influence on the observed settlement patterns. Relative proximity to the Greek mainland and differing opportunities for external trade were probably factors that resulted in variations in the settlement history in the Cycladic islands.[31]

Recent years have brought a number of important publications on aspects of the Aegean prehistory as well as several reviews of the current state of knowledge. From these studies we can list a number of the main topics of archaeological research in the Cyclades that are being pursued today. Though the basic framework of the Cycladic culture remains widely accepted, many scholars strive to add more detail, resolve ill known aspects, or propose refinements of cultural and social processes of the Early Bronze Age in the Cyclades. The following list of research topics is not meant to be exhaustive, but merely serves to suggest recent trends and focal points within Cycladic archaeology. In a review of the state of research in Aegean prehistory, J.L. Davis highlights two major research themes in need of more detailed attention.[32] The first concerns the Neolithic colonisation of the Aegean islands. Neolithic presence and settlement is attested for a number of islands (in the Cyclades these include Keos, Naxos, Thera, Amorgos, Paros, Saliagos, Siphnos, and possibly Mykonos). Although three horizons of Neolithic colonisations of the islands are now recognized, they are still more or less isolated, both temporally and spatially, and not yet connected in a continuous chronological sequence. General patterns and processes of human settlement on the islands have been discussed by J.F. Cherry[33] and more recently by C. Broodbank.[34] The first two horizons are characterized by two distinct cultures: the Saliagos phase in the fifth millennium BC and the Kephala phase in the fourth millennium BC. The third and last horizon lies at the transition of the Late Neolithic to the Early Bronze Age, roughly dated at the turn of the third millennium BC. This transition remains largely unclear and may even be largely non-existent in any real sense. The most promising site in the Cyclades that perhaps may shed some light on this formative period is the Zas cave on the island of Naxos. Preliminary reports of the excavations which were recently begun here suggest the existence of continuous occupation from the Late Neolithic period through most of the Early Bronze Age periods.[35]

In general, material of the Early Bronze Age 1 period is relatively rare in the Cyclades. Four recurring associations of artefact types, or material groups (named after type sites - all cemeteries) are identified: Lakkoudes, Pelos, Plastiras, Louros.[36] Most of the sites with finds from these groups are small cemeteries consisting of only a few cist graves. Settlement remains are extremely rare.

It is during the Early Bronze Age 2 that the Cycladic culture or civilisation was blooming. The origins and relative speed of this process of cultural growth is still a matter of serious debate. Two aspects are central to any discussion of this process. First, the widespread use of metals in many areas of the Greek world. Secondly, what has been called the 'international spirit' which characterises

[31] Differences in the theoretical base of both survey projects are probably also, at least partly, accountable for the observed differences in settlement history.
[32] Davis (1992), 700-703 and 705-707.
[33] Cherry (1981); (1985); (1987); (1990). See also Broodbank (1993); Broodbank and Strasser (1991).
[34] I thank C. Broodbank for lending me his Ph.D. thesis in which he discussed the processes of the earliest human occupation of the Cyclades in great details, see Broodbank (1995), 69-101.
[35] References to Zas cave on Naxos: Zachos (1987).
[36] See in general Renfrew (1972); Coleman (1974); Doumas (1977).

this period. Extensive exchange networks are considered to have been operating at this time stretching over much of the Aegean and the Greek mainland, and occasionally even beyond. Any combination of raw materials, finished goods, people, and ideas may have circulated through these networks. It has become clear that any explanation of the cultural and economic expansion of the Cyclades during the Early Bronze Age 2 must heavily rely on the position it held within the extensive exchange patterns throughout the Aegean. The extent of the key role played by the inhabitants of (some of) the Cycladic islands in this process is still a matter of debate. At the end of this period the Cyclades, as well as the Aegean in general, underwent some far-reaching changes. The precise chronological developments are not completely clear. Some scholars have advocated a gap or period of intense social and inter-regional stress, accompanied by abandonment of settlements, change in burial programs, and even warfare.[37]

Two material groups, the Kastri-group and the Amorgos-group, fall largely in this period following the time of the extensive cultural contacts of the Early Bronze Age 2.[38] A notable Anatolian influence is witnessed in several northern Cycladic and Attic-Euboean sites during this phase. Weapons appear for the first time prominently in grave inventories, possibly suggesting more militant or competitive relations between communities. During this period we can see a change in the main *locus* of cultural developments towards Crete and the most southern Cycladic islands (*e.g.* Thera, Melos). In the northern Cyclades only Ayia Irini on Keos remains occupied, developing into a town-like settlement. It seems that the role of the Cycladic seafaring middlemen declined during this last phase in the Early Bronze Age.

The Middle Bronze Age is the context of the second of Davis' research topics that is subject to much scholarly debate. It involves a process sometimes described as the Minoan thalassocracy, or the 'minoanisation' of the Aegean during the Middle and early part of the Late Bronze Age.[39] Two aspects are of special interest and are the subject of much discussion. In the first place is the question of the extent of political dominance of Minoan Crete over the islands in the central Aegean. Some suggest that Minoan 'colonies' were established on several islands or coasts. In the second place is the question of the wider extent and intensity of Minoan contacts. These are especially noticeable in the southern Aegean and the western line of Cycladic islands. However, the present picture of Minoan contacts may be an artefact of limited archaeological research in many of the northern Cycladic islands (*e.g.* Andros, Tenos, Syros, Mykonos).[40]

Other current research topics in Cycladic archaeology that are being investigated by various specialists include categorical studies of the material culture, such as obsidian[41], frying pans[42], and marble figurative art.[43] Furthermore, scientific characterisation and provenance studies of some materials are also in progress. Ceramic studies for the EBA Aegean are underway on the so-called

[37] See especially Rutter (1984); Barber and MacGillivray (1980); Manning (1995), 66-73.
[38] Renfrew (1972), 533-34; Rutter (1983); (1984); MacGillivray (1984); Sotirakopoulou (1993).
[39] Literature regarding this topic is steadily growing in recent years; important contributions can be found in the book on Minoan thalassocracy edited by Hägg and Marinatos (1984); Wiener (1990); (1991); Gale, ed. (1991); Davis (1979); Schofield (1982); Marthari (1988).
[40] See Davis (1992) for numerous references to relevant publications.
[41] See Torrence (1979); (1986); (1991); Carter (1994); (1996a); (1996b); (in press)
[42] Coleman (1995).
[43] The literature on the Early Cycladic marble figurative art is extensive, see in general Doumas (1968); (1983); Renfrew (1967); (1984b); (1991); Getz-Preziosi (1985); (1987); Fitton, ed. (1984); Cherry (1992).

Talc-Ware.[44] A number of specialized studies has been directed to the analysis of a selection of metal artefacts from Aegean Bronze Age sites.[45] Topics which have also received attention in recent years involve the publication of older excavations, such as of the Pelos cemetery on Melos, Ayia Irini on Keos, and Chalandriani.[46] The problems of the relative chronology have been a subject of strong debate in recent years. Various studies have proposed additions and alterations to the general chronological scheme. A growing number of absolute datings from various sites in the Aegean are beginning to clear up many previously fiercely debated aspects of the chronology.[47] Finally, attention to the practice and technology of seafaring, inter-island trade, and geographical knowledge is a recent subject of scholarly research in the Aegean.[48]

This summary of current research topics is by no means complete, various other aspects of the cultural and social life of the peoples of the Early Bronze Age are under investigation. This review is only a selection of those topics which are more or less of relevance to the study presented below. Several of these aspects will come up during the discussion of the finds from the cemetery at Chalandriani.

1.2. 'The Emergence of Civilisation'

An important turning point in studies of Early Cycladic culture came with the publication in 1972 of the influential book *The Emergence of Civilisation* by C. Renfrew. It can be regarded as a synthesis of archaeological knowledge of the Early Cycladic culture up to the early seventies. At the same time it also laid down the foundations for much of the subsequent archaeological research carried out since. Furthermore, because of its sound theoretical base the study broadened interest in the Cycladic culture history beyond the small group of experts into a wider arena of archaeological debate. Although the theoretical base of the book and some of its discussions on the material culture are now considered with some scepticism, no major shift of its general perspective on the Early Cycladic culture has appeared.

One aspect subject to much debate concerns the relative and absolute chronological placing of identified culture groups and phases. Although these socio-cultural entities are sometimes addressed with new labels, they generally remain in use. The most important contribution of the analysis by Renfrew, however, is his rejection of the principle of culture diffusion and large-scale migrations of population from the Near East as the explanation of the cultural growth in the Aegean during the later fourth and third millennium BC.[49] According to him the origins of the cultural developments

[44] Wilson and Eliot (1984); Wilson (1987); Vaughan (1990); (1993).
[45] Gale and Stos-Gale (1981); (1984); Stos-Gale et al. (1984); see also McGeehan-Liritzis and Gale (1989); Pernicka (1995); Nakou (1995).
[46] R. Arnott is currently preparing the results of the British excavations at Pelos for a final publication. The excavations carried out at Ayia Irini are published in a series of monographs under the title of KEOS, of which several volumes appeared in the last years, especially relevant to this study are Coleman (1977a) and Wilson (1999).
[47] For a summary of the chronological debates in the Aegean Early Bronze Age, see Manning (1995).
[48] Liritzis-McGeehan (1988); Broodbank (1989); (1993); (1995); see also Johnston (1982) on prehistoric shipbuilding.
[49] Platon (1981) distinguished between three kinds of explanations for the cultural developments in the Aegean during the transition of Late Neolithic to Early Bronze Age: migrations; influences or diffusion; and local evolution.

during the Late Neolithic and Early Bronze Age should instead be sought within the particular local situations. This perspective of autochthonous cultural development does not exclude occasional contacts with cultures and civilisations in the wider area of the eastern Mediterranean.[50] Indeed, ideas, goods, and people will have entered the Cycladic world at different times during these periods, but they completely integrated into the existing local cultures of the Cyclades. The existence of such contacts between the Orient and the Aegean is not in itself an explanation for the form and development of the local Cycladic cultural trajectory. Secondly, Renfrew further rejects any monocausal explanation of the observed phenomena. Instead a multivariate model based on the General Systems Theory is advocated. Although the model may be criticised on many of its details (choice of sub-systems, nature of the connections between them, not accounting for the role of individual human agency as a force in cultural change, and overstressing the importance of metallurgical developments) it certainly elevated the study of the Aegean prehistory above the traditional material or artefact oriented studies. In the period since its appearance in 1972 no other encompassing model has yet been proposed to replace it, although many archaeologists studying the Aegean prehistory are no longer explicitly working within a systems approach paradigm.

Because of the far reaching influence of the book by Renfrew on subsequent research in the Cyclades and the Aegean in general, it is necessary to look into its theory in more detail. Not satisfied with the traditional cultural-historic accounts of cultural change in the earlier prehistory of the Aegean, Renfrew sets out to study the observed features within a more rigorous and explicit framework. For this he makes use of the General Systems Theory. This systems approach aims to present a coherent model for studying complex structures, such as a society and its interrelating parts. However, a system is only a model or heuristic device designed to represent complex data into a more manageable and clear form.

In designing a model, three main steps may be identified. First we need to choose the variables or components which constitute the system. Also, we need to define the scale of these components according to a hierarchy of increasing complexity. Components may be at the atomic level or on the level of larger aggregates or units combining several lower order elements. The selected components are called the sub-systems within the overall system. Each sub-system corresponds with a particular network of relations. The second step involves setting the boundaries of the system, both in time and space. These boundaries may be arbitrarily set by the investigator in accordance with convenient criteria taken from the regional geography and chronology. Finally, the relations between the various sub-systems must be defined. Theoretically an infinite number of possible connections between the components of a system may exist. A choice should be made of those connections which are relevant to the research question at hand. Thus, systems approach enables a complex system to be understood in broad outline as a conceptual tool. Besides these elements and relations, certain basic

[50] The criticisms by Bernal (1991, 63-77) on the supposed Euro-centered vision underlying the "model of autochthonous origin" raises many important points, but in my opinion fails to take into account the basic fact that any widespread steering influence of Near Eastern civilisations on the Aegean in the third millennium BC cannot adequately be substantiated through archaeological, or even historical, data. In his broad synthesis of the chronology and archaeology of the transional period of Late Neolithic to Early Bronze Age, Treuil (1983) investigated the question of any evidence which may suggest a migration of people from Anatolia to the Aegean during this time. His conclusion is that despite a major shift in settlement locations in the Early Bronze Age, no other indication exists to support such a hypothesis of peoples migrating into the Aegean.

system parameters may be defined. In the case of analyzing archaeological cultures these may include the population level, settlement pattern, and the type of subsistence economy. Essential to the systems approach is the fact that systems constantly seek to retain a stable situation (homeostasis or equilibrium). Whenever some internal or external action or condition upsets the system's stable state, it takes the appropriate counteraction to retain its stability. Three kinds of disturbances are identified by Renfrew regarding cultures and societies: fluctuations in the natural environment (specially in subsistence produce); outside human agencies; and innovation within society. These disturbances are counteracted through appropriate actions in order to maintain its stable state, or homeostasis. The mechanisms through which the system maintains its equilibrium are either negative or positive feedback. Counteractions which do not affect or change the overall system, are called negative feedback. They ensure that the system continues in its current situation. However, when changes in one sub-system are amplified and affect other sub-systems, the overall system may diverge or deviate from its initial condition. This kind of change is called positive feedback, and is a key process in understanding progressive growth. Renfrew further introduces a special kind of positive feedback called the multiplier effect. It comes into operation when change in at least two sub-systems further induces changes in the size and structure of the overall system. Its effect is a situation of rapid and sustained cultural growth. In order to understand the reason why the multiplier effect comes into active operation we must study the initial conditions of the system prior to the observed change. It involves detailed knowledge of the so-called threshold situation in the process of change. This situation is what Renfrew calls the "emergence of civilisation". In this way cultural change is described as a process in which certain changes within sub-systems are amplified through others, thereby upsetting the original homeostasis. It causes the system to seek a new level of stability. Over time such successive adaptations to new system states establish a cultural trajectory within a certain region and period.[51]

In bringing the theoretical basis to the concrete situation of the archaeological record of the Cyclades in the third millennium BC, Renfrew's book has shed much light on the processes which contributed to the observed cultural developments. With regard to the Aegean world in the third millennium BC, Renfrew identified five or six sub-systems. Each sub-system focuses on a particular aspect of the society, and each can be followed over time more or less in isolation from the others. Renfrew first distinguished the subsistence sub-system. Here the relationship between man and the natural environment is investigated in terms of exploited or available food sources. Second is the technological sub-system. Its elements are man, material resources and finished products as well as the technological knowledge and particular craft techniques that are available to the society. This social sub-system is focused on the relationships between people, both as individuals and in groups. This sub-system is difficult to separate from others since all human actions are primarily social. Everyone comes into the world as a member of a group. Next is the projective and symbolic sub-system, which consists of all actions relating to religion, art, language, and science. Its involves all cognitive aspects of society. Finally, the trade and communications sub-system combines all activities in which ideas, information, commodities, raw materials, and people are relocated from one settlement to an other, usually over some distance. It also includes the study of land and sea travel,

[51] For more detailed discussions of the workings and application of systems theory in archaeology, see Renfrew and Bahn (1991), 421-22, 433-34; Clarke (1978), 42-83; Flannery (1968); Hill (1977).

transport capabilities, and facilities for moving materials over land or sea (*e.g.* carts, boats). In addition Renfrew identified in the final chapter of his book an extra separate sub-system. It comprises all activities related to the use and processing of metals.

From this complex web of sub-systems and their connections, Renfrew distilled two specific processes which describe the evolving social-economic and political complexity of the third and second millennia BC. Both present a systemic trajectory toward the emergence of complex social hierarchies and social organisation in the second millennium BC. Each of these two models will critically be discussed below in the light of information that has become available since the time they were first proposed by Renfrew. Various later elaborations on the ideas presented by Renfrew help us in determining the validity and applicability of the two systemic models of culture change in the Aegean region during the third millennium BC.

The first model, the subsistence/redistribution model, starts out by stressing the effect of changes in the subsistence sub-system. The introduction of new crops in the third millennium BC, the domesticated vine and olive, presented the communities in southern Greece opportunities to exploit parts of the landscape which were not previously brought under cultivation. An increase in local subsistence production allowed for a rise in population and the development of an economic system based on crop diversification and redistribution of foods by emerging local chiefs. The increase in subsistence production and population also made room for craft specialists who worked under the authority of these local chiefs. The key role in this explanation of cultural growth is played by the two newly introduced cultivars, the olive and the grape.[52] Together with cereals (especially barley and wheat) these formed the traditional triad of the Mediterranean polyculture.[53] Critical to an evaluation of the feasibility of this model is the dating of the domestication and widespread cultivation of the grape and olive. So far, the indications for widespread cultivation of both plants is largely restricted to secondary evidence, such as olive wood found at Myrtos, Knossos, and Lebena in Crete.[54] Olive pollen dating to the fourth and third millennium BC can be found in a number of cores from various areas in the Aegean.[55] Although the differences between domestic and wild specimens of grapes or olives are difficult to recognise, there seems to be a growing basis supporting the view that both were cultivated during the Early Bronze Age.[56] The rise, both in absolute numbers as well as in typological variety, of ceramic vessels designed for use of liquids in the Early Bronze Age 2 period may equally indicate an increasing importance of the grape and olive. Furthermore, vine leafs impressed on the base of ceramic vases are regularly found in several Early Bronze Age sites in the Cyclades and beyond, especially on simple drinking vessels, such as conical cups (see below chapter 4). Cups such as these may well have functioned as wine beakers with an image of a wine leaf impressed on their base.

[52] For criticisms of the Early Bronze Age cultivation of the olive and vine, see Runnels and Hansen (1986); Hansen (1988); Zohary and Hopf (1988), 140-41; Van Andel and Runnels (1988), 240.
[53] For studies of prehistoric and ancient agriculture and cultivated plants, see J.M. Renfrew (1982); Barker (1985), 49-50, 55-65; Sallaras (1990);
[54] J.M. Renfrew (1972), 315-17; Rackham (1972), 299-304; Evans (1921-1945, volume II), 123, n. 2, 135; Alexiou (1960); For a recent discussion of the available evidence, see Manning (1994), 231.
[55] See Wright (1972); Turner and Greig (1975); Sheehan (1979), 45; Kraft *et al.* (1980), 204; Bottema (1980); Hansen (1988), 46; Moody (1987), 91-93.
[56] Cultivated *Vitis* produces a substantially lower amount of pollen that its wild forms, see Haagsma (1993), 253.

The step from the introduction of new crops in the subsistence agriculture to the establishment of a complex social hierarchy or even social stratification involves several intermediate stages. It is dependent on several factors which can only be monitored within the perspective of archaeological reconstructions on a regional level. A redistributive system entails that one person or a small group take control over the agricultural production produced by others. This control may even go as far as complete ownership. Part of the production will be used by the chief to support specialised craftsmen or for maintaining external relations with other communities. Most of the produce will be redistributed among the dependents of the chief. This process of control over the subsistence production resembles the model of patron-client associations. The emergence of these stratified societies is not based on the control, management and monopoly of material wealth, but rather the control of human labour. The conditions favouring the development of stratified societies in prehistoric Europe are found in the particular circumstances of certain kinds of regional environments. Gary Webster identified four such criteria which are essential for understanding the development of patron-client associations: diversity of natural environment (*e.g.* soils types and their workability, temperature and rainfall patterns), circumscription (intensification and/or diversification instead of fission or out-migration), productive potential to allow for population growth (through indigenous increases and immigration), and finally, agricultural uncertainty leading to risk-reducing strategies and economic diversification.[57] Competition between neighbouring communities over limited available resources may have accompanied this process of formation of patron-client associations.

The evidence from the Cyclades in the Early Bronze Age is not conclusive of a development towards stratification or elites. Although some kind of ranking is certainly visible in the burial evidence, complex social hierarchy is found only in those areas in the Aegean which possess large continuous tracks of arable land and hill slopes for olives and vines, such as Crete and the Argolid. In other words, in areas where the socio-environmental circumstances comply with the four criteria mentioned above. The possibilities for diversification and intensification of agricultural production probably lead to an overall increase in population numbers, and by extension in a growth of settlement numbers. The next step towards increasing social complexity and larger socio-economic structures could only be made in those areas with potential for sustained growth. Thus, the subsistence/redistribution model may explain the development of increased social and economic complexity in the second millennium BC. It is less suitable in explaining the so-called 'international spirit' of the third millennium BC in the Aegean. For this the second model also proposed by Renfrew in his book may be more appropriate.

In addition to the subsistence/redistribution model, Renfrew proposed the craft specialisation/wealth model. It is composed of another set of factors which are primarily centred around another innovation, namely the growing use of metals. A number of causal factors changed the original situation of the mid-fourth millennium into a totally different social order by the second millennium BC. The steps in this causal chain include the mastering of the production of tin-bronze, the proliferation of metal weapons and fortifications, the spread of advanced metallurgical techniques over much of the Aegean through maritime contact, intensification of subsistence

[57] See Webster (1990).

production in order to produce a surplus, specialisation of crafts controlled by local chiefs, a growing competition between local communities for scarce resources, such as metal, and the emergence of a stratified society in which wealth differences were expressed in elaborate grave inventories. Central to this model are the effects of the introduction of metallurgy on the societies of the Late Neolithic and Early Bronze Age. The cultural growth of the third and second millennia results from changes in the technology/metallurgy sub-system and the trade sub-system. These in turn induce change in the other subsystems (subsistence, social, and symbolic sub-systems).

Both scenarios are nevertheless limited in their explanatory power. The trigger which sets the causal chain in motion is either the introduction of new cultivated species or the technology of metalworking. Although both models follow different paths, after several steps they reach the same place. They are also not exclusive, but are rather complementary, both may be equally valid and mutually influential. Several other causal chains could also be developed to explain the cultural changes in the period under study. By studying the observed changes within the context of the multiplier effect, a more complete and general explanation of culture change in the prehistoric Aegean can be set up, without relying on external factors. For this Renfrew presented a matrix of positive interactions between the various sub-systems of the overall culture system. The specific nature of the matrix determines the nature and speed in which the complex web of positive feedback relations govern sustained cultural growth of the society. Thus the systems theory is applied to the study of the cultural changes observed in the Aegean during the third and second millennia BC. The resulting model is restricted to this particular instance in human history, but may be applied to other contexts in order to understand the development of complex societies and cultural growth.

1.3. Beyond the 'Emergence'

In the years following its publication, Renfrew's book had an effect on general theoretical perspectives in archaeology and on the reconstructions of Aegean prehistory. Furthermore, the addition of large quantities of new data makes the development of new models not only possible, but also imperative. Various studies in the last decade have led to a number of alternative models seeking to explain the cultural and socio-economic changes in the third and second millennia BC. Each of these recent theories focuses on a different aspect considered crucial to the understanding of the observed changes. Several alternative models have received wider attention in the archaeological literature of other parts of prehistoric Europe.

Two of these models are also based on the particular characteristics of the natural environment and subsistence economy of the Mediterranean or southern Aegean during the later prehistoric period. Antonio Gilman stresses the importance of the new cultivars, olive and grape, as the basis for the development of control and power over these long-term agricultural investments by an emerging local elite.[58] Growing dependence on these agricultural products, both for local use and as exchange products, tied the people firmly to the land, making them more vulnerable to a political

[58] Gilman (1981; 1987); see also Shennan (1986).

dominance (or 'protection racket') by the local elites or by other dominant communities.[59] Further steps in this model are closely parallel to the subsistence/redistribution model by Renfrew (see above), with a local chief controlling a redistribution economy accompanied by specialisation and division of labour beyond the level of the household.

Fluctuations in the inter-annual agricultural production due to variations in temperature and rainfall, and topographic diversity in the local environment, form the basis of another model explaining the process of emerging complex societies. This model is generally known as the 'social storage' model advocated by Paul Halstead and John O'Shea.[60] In coping with these fluctuations, the year to year agricultural production communities have in general four possible responses: mobility; diversification; storage of surplus; and reciprocal exchange. Because of the long-term investments in agricultural facilities (*e.g.* terracing) and tree-crops, such as the olive, and the relative scarcity of new areas for cultivation to move to, mobility is not a viable option for these sedentary farming communities. The other options, diversification, storage, and exchange, are considered especially suitable strategies for the more marginal areas in the southeastern part of Greece, including the Cyclades. Through the mixed farming economy of cultivated crops and husbandry of sheep and goats, communities in this area spread the risk of climatically induced crop failure. Fluctuations in crop yields are counteracted through producing a surplus for storage, diversifying the range of cultivated species, and the practice of inter-cropping (cultivating two different crops on the same plots). Crops are cultivated in different locations scattered over the territory. Diversity in the local topography and micro-climatic variations may result in fluctuations in the yield for each of the different locations where a certain species is cultivated.[61] Part of the surplus in production is 'stored' or converted in the form of animals, such as sheep, which can be slaughtered in times of need. The maximum quantity of livestock which can be kept is proportional to the extent of grazing land available, such as uncultivated hill slopes and fallow fields. Part of the surplus may also be exchanged with other communities for valuables or needed resources. Thus a system of surplus production and exchanges develops in which favourably located communities may attain wealth and power and attract other farmers. They grow in population to a level where the social organisation of the community develops into a stratified system. Control over production and labour comes into the hands of a local elite or chief. The agricultural economy grows in scale from the household subsistence level to one with a redistributive system, as can be seen in the Minoan and Mycenaean palaces.

Another scenario explaining the emergence of civilisation in the Aegean is proposed by Tjeerd van Andel and Curtis Runnels.[62] It uses elements of several of the above described models. The locus of change, however, is moved to the domain of geography, technology, and trade. Instead of the subsistence/redistribution model or the craft specialisation/wealth model, they propose instead a more critical role for trade interactions in valuable goods, cementing a widespread network of elite

[59] See Champion *et al.* (1984), 182. See also Blok (1974) for a similar argument in explaining the role of the mafia in southern Italian and Sicilian rural society.
[60] Halstead (1981; 1989); O'Shea (1981); Halstead and O'Shea (1982). See also Gallant (1991) on risk management strategies of agricultural communities in ancient Greece.
[61] See also Forbes (1976) on this strategy of spreading the risk of crop failure through cultivating species in different parts of the local territory.
[62] Van Andel and Runnels (1988).

alliances throughout the southern Aegean. The antecedents of such a trade network lie in the millennia-old networks of exchanges built up during much of the Neolithic periods.[63] In fact, their model extends the initial 'threshold situation' of the model by Renfrew back by a thousand years. Three crucial developments or innovations occurring during the fourth millennium in the Aegean created conditions favourable for a 'take-off' in economic and social organisation. The first involves the introduction of traction animals, the plough and animal fertilizers which allowed the Neolithic farmers to exploit new kinds of terrain previously not feasible. Secondly, the so-called 'secondary products revolution', first proposed by Andrew Sherratt, added new and profitable products to the local agricultural economy in the way of wool, milk, and cheese.[64] The mixed economy of crop cultivation and small-scale pastoralism becomes the prevailing economic strategy in many areas of the Mediterranean during the Early Bronze Age. Thirdly, new developments in shipbuilding and navigational skills greatly improved the capacity to move bulk goods over larger distances. In combination these processes allowed people to move to the Cycladic islands and settle permanent communities. In order to overcome temporal shortages in agricultural production these communities were obliged to take part and maintain a distribution network. Through this network of regular contacts and exchanges, both foodstuffs, raw materials and finished goods changed hands, arriving at locations sometimes far removed from their origins.[65] A major part of the commodities traded did not enter the archaeological record, such as "salt, clay, colouring matter, domesticated plants and animals, wool and hair, honey, cheese, textiles, hides, and perhaps dried or salted fish".[66] Other items that were exchanged in these networks include metals, flint, obsidian, marble, millstones, ornaments, pottery, shells, stone vases and figurines. Settlements located at favourable nodes of the widespread network could develop into centres where increased wealth in the hands of successful traders (and raiders?) brought about social ranking expressed in elaborate burial rituals, such as in the cemetery at Chalandriani on Syros.

A further elaboration of this model can be seen in the two papers by Cyprian Broodbank.[67] He persuasively argues that the long boat played an important role in Cycladic cultural developments of the third millennium. Interactions within the trade network became not a means, but rather a goal in itself. Knowledge of foreign lands and the capacity of initiating long distance sea voyages formed an important power base for local chiefs in Cycladic communities, such as Chalandriani, Keros, and Ayia Irini. Emphasis is given to the far-reaching influence of exotic contacts within the local social and ideological context. Status could be attained through tales of exotic lands and people, in short those who went the furthest gained the highest praise.

In a recent paper on the development and decline of Early Bronze Age cultures in the Cyclades and Crete, Sturt Manning stresses the "very small scale nature of Cycladic society in the EBA period".[68] Although his paper does not present a true model of socio-cultural developments in the third millennium Aegean, it underscores the differences between the developments on Crete and

[63] See also Perles (1992).
[64] Sherratt (1981); (1983).
[65] See for instance McGeehan-Liritzis (1983).
[66] Van Andel and Runnels (1988), 243.
[67] Broodbank (1989); (1993); see also McGeehan-Liritzis (1988); on the role of long-distance travel in traditional societies, see Helms (1988).
[68] Manning (1994), 229.

in the Cyclades during this period. The central question of his interpretation focuses on the problem of how the marginal environments of the islands, with their small populations, could have played such an important role in the development of what Renfrew has called the 'international spirit' of the Early Bronze Age 2 phase. However, Manning warns against overrating this 'international spirit' since only a few sites in the Cyclades probably played a role in the network of inter-regional contacts. A few communities would have the opportunity of becoming major settlements in the Early Bronze Age. Critical factors why some communities attained prominent positions are the availability of local arable land resources and their position vis-à-vis communications lines, favouring coastal locations with good natural harbours placed at nodal points within the wider Aegean communication and trade routes. An essential element of all communities in the Cyclades is the fact that none, not even the largest settlements, had a population large enough to be completely endogamous. Contacts with other communities on other islands or coasts were indispensable in order to meet suitable partners. The widespread distribution of typical Cycladic artefacts may be the material residue of such a network of exogamous communities. The same network may also have ensured the supply of foodstuffs in times of need when local agricultural production failed (social storage model). The regular social interactions between scattered settlements throughout the Aegean (mainly the Cycladic islands and the adjacent coastal areas) were accompanied by exchanges of basic commodities, subsistence goods, raw materials, ideas, technological skills, prestige objects, and styles of decoration. Certain artefacts suggest a system of gift-exchange of prestige items between chiefs and possible inter-communal feasting (*e.g.* marble figurines, metal ornaments, ceramic drinking assemblages). Local social inequality (or small-scale ranking) was expressed in differential access to exotic items or commodities, which entered graves through the mechanisms of burial rites. Status expression was predominantly through burial variability, at least in sofar as it involves the use of durable materials. Although a few settlements are known, compared to the many burial sites, it seems clear that social differences were probably less marked in terms of the architecture of settlements.

In general there seems to be a some kind of consensus on several aspects of the cultural developments during the fourth and third millennia BC in the Aegean. Although different scholars stress different aspects within these broadly sketched cultural processes, most would agree on a number of crucial innovations which started off the cultural growth. Changes in the agricultural economy of the Final Neolithic initiated a chain reaction of subsequent changes in all other fields of human existence in the Early Bronze Age (*e.g.* the plough, animal traction, wider use of secondary animal products). Whether these changes or innovations in the subsistence subsystem triggered a rise in population or were themselves a result of population growth, is still a matter of debate.

Essential in many of the previously mentioned models and scenarios is a perspective on the cultural development that is eloquently expressed in the title of the book by Renfrew: the emergence of civilisation. This perspective views the developments in the Aegean world as a uni-linear and evolutionary process of increasing cultural complexity starting in the fourth millennium and culminating in the early states of the Minoan and Mycenaean civilisations of the second millennium.

Held against these different views is the idea that there are fundamental differences between the cultures of the Early Bronze Age, including the 'Cycladic civilisation', and those of the Middle and Late Bronze Age periods. What we observe during the Early Bronze Age seems much more at home within the Neolithic world than in the palatial redistributive societies of the later Bronze Age. The cultural and social organisations in these two periods are of a completely different scale of

complexity. Instead of viewing the cultures of the Early Bronze Age as forerunners of the later complex societies, it seems more appropriate to stress the fundamental differences between these two periods. A number of aspects can be presented which argue that, although certain features and innovations will certainly have continued and developed into an evolutionary scheme of cultural growth, there does appear to be a radical break between the Final Neolithic and Early Bronze Age on the one hand and the Middle and Late Bronze Age on the other hand.[69] A similar distinction is expressed by Mark Patton recently where he describes the Aegean Early Bronze Age as 'exchange-oriented' societies, while the Middle and Late Bronze are characterized by 'monument-oriented' societies.[70] The main problem seems to lie in determining the evolutionary relationship between these two types of societies. Are the cultures of the Early Bronze Age to be viewed as forerunners of the more complex societies of the later Bronze Age, or can we observe a break or caesura between them. In general, the Early Bronze Age cultures in the Cyclades and on the Greek Mainland are much better understood when seen as the culmination of cultural and socio-economic processes which started in the later Neolithic periods. The use of such terms as Neolithic and Bronze Age is not very helpful in this sense. They suggest a transition towards a new era when in many areas of the Aegean there is clear continuity in settlement patterns and cultural assemblages between them. Also, metallurgy already began in the Final or Late Neolithic period, and became only widespread during the second phase of the Early Bronze Age. This Neolithic way of life, based mainly on an 'exchange-oriented' model, ended in the still confused period following the second phase of the Early Bronze Age. During this intermediate period the number of sites drops dramatically in many regions. Of the extensive settlement pattern of the preceding phase, only a handful of settlements were still occupied in the Early Bronze Age 3. Many settlements were abandoned, most of the larger settlements were destroyed, and many sites were simply not re-occupied in later periods. A sharp drop in population numbers can be deduced from this decrease in settlement numbers. Small fortified hill-top sites appear for the first time, indicating a time of insecurity. Most if not all of the cemeteries in the Cyclades and elsewhere were no longer used. There are indications that people from outside the immediate region arrived and possibly settled in several areas, sometimes on sites not previously inhabited. New types of artefacts enter the Aegean assemblages, especially pottery and metal objects. In general, there appears to be an overall breakdown of the previous Early Bronze Age cultural pattern.

During the Middle Bronze Age a new type of settlement evolves in the Cyclades as well as elsewhere, which resembles that of a town or central place with associated satellite villages and hamlets, such as Phylakopi on Melos, Ayia Irini on Keos and Akrotiri on Thera. How are we to interprete these new features? Do they result from local developments, or are they the effect of changes elsewhere in the Aegean? On the evidence available today there seems to be no basis for arguing that the development of large settlements in the Cyclades was the result of strictly local

[69] The island of Crete is left out of the picture sketched here since it followed a somewhat different and more independant course. Two factors are of great importance in understanding its particular cultural development. First, its distance from all other regions in the Aegean, which only allowed occasional overseas contacts. Second, its large size which allowed for a more indigenous social, cultural and political development. During the Neolithic and Early Bronze Age cultures, Crete was much more isolated than any other area in the Aegean and evolved along a different course of socio-cultural evolution.

[70] Patton (1996), 175.

processes. Outside influences are too strong, for instance in the growth of Minoan imports found at these sites. Some scholars have suggested the development of larger settlements in a few Cycladic islands the result of Minoan colonists. Minoan elites undertook a deliberate policy of securing the flow of resources from different parts of the Aegean to Crete. Such a core-periphery model can also be postulated for the Mycenaean palace civilization in the Late Bronze Age. Whatever the strength of these interpretations it seems clear that the Early Bronze Age differed fundamentally from the later prehistoric periods. In Greece and on Crete cultures developed during the Middle and Late Bronze Age were built on radically different socio-economic and political systems. They are located in areas with large stretches of good arable soils and develop into polities with central places surrounded by many smaller satellite settlements in the vicinity. There is for the first time evidence of special religious architecture both inside these larger settlements and separate from it in certain chosen locations. The internal architectural organisation of the larger settlements is more complex with buildings of different functions and uses. New elements in cultural and social life appear, such as written language or notational systems, religious systems, political organisation, elaborate burial monuments for elites or kings. Some of these developments may have been influenced by contacts with cultures in the Near East. There also seems to be a break between the Neolithic world of the Final Neolithic and the Early Bronze Age and later periods in terms of the mythological recollection in much later times. None of the myths which involve the 'pre-Hellenic' world seems to extend beyond the Middle or Late Bronze Age.[71]

Instead of viewing the Cycladic culture of the Early Bronze Age as a forerunner of the later cultures of the Middle and Late Bronze Age, it can be argued that the Early Bronze Age culture reached the full potential of the Neolithic way of life. Following the apex of that development, a system collapse began which may have been caused by the complete exhaustion of the available resources and the upsetting of traditional trade routes. Although many innovations and cultural achievements remained in use, the locus and momentum of cultural development was taken over by other, more suitable, regions in the Aegean, which had more potential for growth. During the later Bronze Age, a radically different kind of society developed, based on a new social order. It was largely land-based, 'monument-oriented', with larger political aggregates in which ideology became a much more integrating factor.

Although certain elements (*e.g.* social ranking, technological skills) in the Cycladic culture of the Early Bronze Age were conducive to the formation of an early state or a civilisation (in the true sense), the particular constraints of the physical and the social environment inhibited this culture from crossing that threshold. These constraints are mainly ecological and geographical in nature. No island in the Cyclades possesses tracts of rich arable soils large enough to sustain an ample population. Most islands have only small isolated pockets of arable land with additional areas for a pastoral economy. Climatic conditions are such that local communities remained highly susceptible to fluctuations in subsistence production. Secondly, although the sea was an important factor which

[71] See for instance the passage in Thucydides (1, 4) on the purification of the island of Rheneia, near Delos. He refers to the first inhabitants of the islands as Carians, a mythical people not related to the later Greek-speaking populations. These inhabitants were expelled from their islands by Minos. He is one of the earliest mythical individuals mentioned in ancient sources, the king of Knossos, together with his brother, Radamanthus, who ruled the Aegean with his fleet.

facilitated contact between equal communities on various islands (most within viewing distance of each other) it was an impediment for the construction of politically integrated and stable larger social aggregates where daily dominance by an elite is essential. The Cycladic islands remained a loose network of connected communities without any unifying political organisation. Both these constraints were not operating on Crete or parts of the southern Greek Mainland. There we see enough continuous areas of good arable land and possibilities for more intense policing of the various communities, allowing for the formation of larger political units which developed into early states.

Thus as more details are made available of the Cycladic culture of the third millennium, the particular parameters of that culture are becoming more and more clear. What remains to be understood are the particular conditions and circumstances which enabled the Cycladic communities to grow from the initial Neolithic situation into the highly elaborate culture of the Early Bronze Age. An example from a much late period may perhaps shed some light on this question. During all of the history of human settlement in the Cyclades and the other Aegean islands we can recognise two periods when they played a disproportionately large role in cultural and economic affairs of the wider Aegean world. First, during the third millennium BC and, much later, in the decades following the establishment of an independent Greek State in 1832. During both periods it was trade and shipping which allowed these island communities to grow in wealth and populations above and beyond their normal situation.[72] The Greek, and especially the Aegean, commercial fleet showed a remarkable growth in numbers of tonnage and ships during the later eighteenth century. In the aftermath of both the Russian involvement in the Aegean world and the Napoleonic Wars, Greek merchants became fierce competitors of the English and French fleets. In the decades following the establishment of Greek independence, a truly explosive growth was witnessed in the Greek merchant marine. A large number of Aegean islands became major ports, and trade relations flourished. Among the ports most frequently mentioned during this period, many were in the Cyclades (*e.g.* Syros, Tenos, Santorini, Mykonos, Keos, Ios, Andros, Siphnos, Melos, and Naxos). The island of Syros alone was involved in nearly 40 per cent of all sea trade in the middle decades of the nineteenth century.[73] At least four factors contributed to this exceptionally strong increase in Greek shipping. First, we see a strong growth in East-West trading relations in the eastern Mediterranean in the early nineteenth century which was mainly concentrated in a few Greek island ports. Quarantine regulations in trading with the Levantine world prohibited ships to freely sail from eastern ports to Europe. Goods, and sometime people, had to disembark in certain Greek ports after which the goods were reloaded into Greek or European ships for transportation to the European markets. This gave the insular Greeks almost total control of trading relations with the Levant. Second, this period sees a growing interest in trading relations with southern Russia and the grain trade from the Black Sea. These commercially profitable enterprises were practically a Greek

[72] See also relevant texts in the catalogue of the exhibition Delivorrias, ed. (1987).

[73] See Kolodny (1974), I, 103-12, 192-99, 325-74; See for the southern Argolid, Sutton in Sutton and Van Andel (1987), 70-72. The growth both in numbers of ships and tonnage registered at the port of Ermoupolis on Syros is exemplified by these figures taken from Kolodny (see above):

1834: 2,891 ships, ca. 75,000 tons
1838: 3,269 ships, 88,502 tons
1855: 5,063 ships, 296,801 tons, 30,000 sea men

monopoly, and involved a large number of ships. Third, the new Greek government had a keen eye for promoting Greek trade and shipping interests through economic policies and laws ensuring commercial development in many ports in the Aegean. At this time Piraeus was still a minor port in terms of the number of calling ships and tonnage. Many islands, such as Hydra, Spetses, Syros, and Psara, developed into prosperous communities with numerous insurance companies, foreign banks, and shipping agents. Finally, Greek merchants living in Greece kept in close contact with their compatriots abroad within a widespread network of mutual assistance and commercial cooperation in the wider Mediterranean region.

During the nineteenth century some of the Aegean islands reached astounding population, wealth, and trade figures. Even small islands, such as Psara and Spetses, contributed a disproportional part of the annual Greek trade income. Its settlements became adorned with richly decorated stately houses of the wealthy ship owners. Later, with the growth of Piraeus as the main port in Greece, many of these islands again tumbled into oblivion or were nearly completely deserted. This example from a much later period is included here to show that only in times of exceptional conditions do we see that the islands rise to prominent positions. Settlements which developed into prosperous communities were not located in areas with extensive tracts of arable lands or valuable resources to be exploited, but at certain cross-roads in the international sea traffic. In all other periods the majority of Aegean islands remained in the margins of cultural and economic life in the eastern Mediterranean.

The decline of Aegean island shipping prosperity began with the growing importance of the port of Piraeus following the opening of the Corinth Canal in 1893. Within a few decades nearly all sea trade moved to the Piraeus at the expense of many of the smaller island communities, such as Syros and Psara, which lost their once prominent positions. In general, trade with the Levant became less important in the later part of the nineteenth century. The widespread change from sail to steam powered ships in the second half of the nineteenth century was taken up relatively late by the Greek merchants. The conversion to steam was most actively pursued by the Athenian shipowners who thereby secured prominent positions in Greek shipping during the final decades of the nineteenth century, partly at the cost of the insular shipowners who continued to use sailing ships. Although the Greek merchant marine gradually lost its top position in terms of tonnage and number of ships in the Mediterranean trade, it successfully adapted to new areas of shipping in the twentieth century. Today Greece still ranks among the top in worldwide tonnage and ships registered under its flag.[74]

1.4. Natural environment and social geography of present day Syros

Syros lies in the midst of the northern part of the Cyclades and is surrounded by the islands of Andros, Tenos, Mykonos and Delos, Paros, Antiparos, Seriphos, Kythnos, Keos and Gyaros. All lie within a range of 50 km (see figs. 3-4). The distance to the modern harbour of Piraeus is approximately 122 kilometres or 83 nautical miles, and it takes the ferry some four hours to cover

[74] For more details regarding the Greek merchant marine, see Andreades (1964); Papathanasopoulos (1983).

this distance. Syros belongs together with other islands to a geographical unit, the Cyclades (or the Archipelago, as they were called during the early modern period), in the southern Aegean Sea.

The Cyclades consist of a group of islands including both larger ones, such as Naxos, and smaller ones, such as Herakleia or Keros.[75] These islands lie roughly along an axis stretching from the north-west to the south-east: from the southern coasts of Attica and Euboea towards the eastern tip of Crete and the islands of the Dodecanese. The total land surface of the Cycladic islands amounts to approximately 2,700 km^2, which is nearly 2 % of the total surface of Greece. The Cycladic archipelago measures 220 km along the north-south axis and 150 km from east to west. Wide expanses of open sea lie on the northeastern and southwestern sides of the Cycladic islands, while on the southeastern side they are less clearly separated from other groups of islands. Modern administrative divisions may hide ancient systems of interactions. These are especially difficult to understand in the southeastern part of the Aegean. The geological situation, however, is much clearer. The Cycladic islands are the upper part of a submerged landmass or platform which is rarely deeper than 200 m. Deeper channels separate this landmass from surrounding islands and coasts on nearly all sides. The Aegean is a relatively young formation. Around 170 million years ago, during the Neozoïcum, the plates of the Balkan and Asia Minor moved closer towards each other and created the mountain ridges in the western part of Greece and Crete. The Cycladic massif broke away and became submerged below the surface of the sea, leaving only its highest peaks dry. Most islands are made up of metamorphic rocks (granite, gneiss, marble and schist); only two are volcanic in origin (Melos and Thera). Tectonically the area is unstable and earthquakes occur regularly. One of the most recent large earthquakes took place in 1956, during which the island of Tenos was severely effected. Most islands are below 500 m in altitude. The two highest peaks are found on Andros (Mount Petalon, 994 m) and Naxos (Mount Zas, 1004 m). The islands of Ikaria, Astypalaea and the Dodecanese do not belong, according to these strict geological terms, to the same unit as the Cyclades.

In total 39 islands belong to the Cycladic island group, 24 of which are inhabited today, in addition to a large number of uninhabited small rocks and islets.[76] The occupation history of the islands does not show a uniform pattern.[77] Some islands have been continually inhabited for several thousand years, while others were only occupied for certain periods of time and were otherwise left alone. In general we can distinguish three patterns of settlement histories in the Aegean. The variations in these patterns are closely related to the relative size of the individual islands.[78] The first

[75] Struck (1912, 19) counts for the Cyclades 24 larger islands and 200 smaller islets and rocks. The number of islands in the Aegean Sea as a whole numbers 483.
[76] See Kolodny (1974), I, 37, 41.
[77] For details about the earliest colonisation of the Cyclades, see Cherry (1981); (1985); (1987); (1990).
[78] See Eggeling (1984), 53.

Figure 3. *Aegean world with the island of Syros*

category consists of those islands which have continuously been inhabited from the prehistoric period onwards; Rhodes, Crete, and possibly Naxos are such islands. The second category, the middle-large islands, such as Syros, Andros, Paros, are abandoned only in times of widespread political and social instability. The presence of military installations and fortifications also reflect their precarious situation in such times. The third category includes islands which are only settled in times of peaceful and prosperous relations in the Aegean world as a whole. Otherwise they were not inhabited and were only occasionally visited by fishermen or shepherds tending their flocks. In most cases these smaller islands are part of the political territory of larger islands and are under their control. Examples are Gyaros, Epano and Kato Kouphonisia, Keros, Antimelos. On Gyaros, 15 km northwest of Syros, a few artefacts and a Roman inscription testify that this otherwise deserted island was settled during the Roman Imperial period.[79]

[79] This triangular shaped island composed of mica-schists and marbles, rising up to 489 m at the highest point, has some sparse evidence of Roman occupation. The island is referred to in Tacitus, *Annales* III, 68-69, IV, 38; Juvenal, *Satires* 1, 73 and 10, 1709; Cicero, *Att.*, 5, 12. During the Roman Empire it was used as a place of exile, which

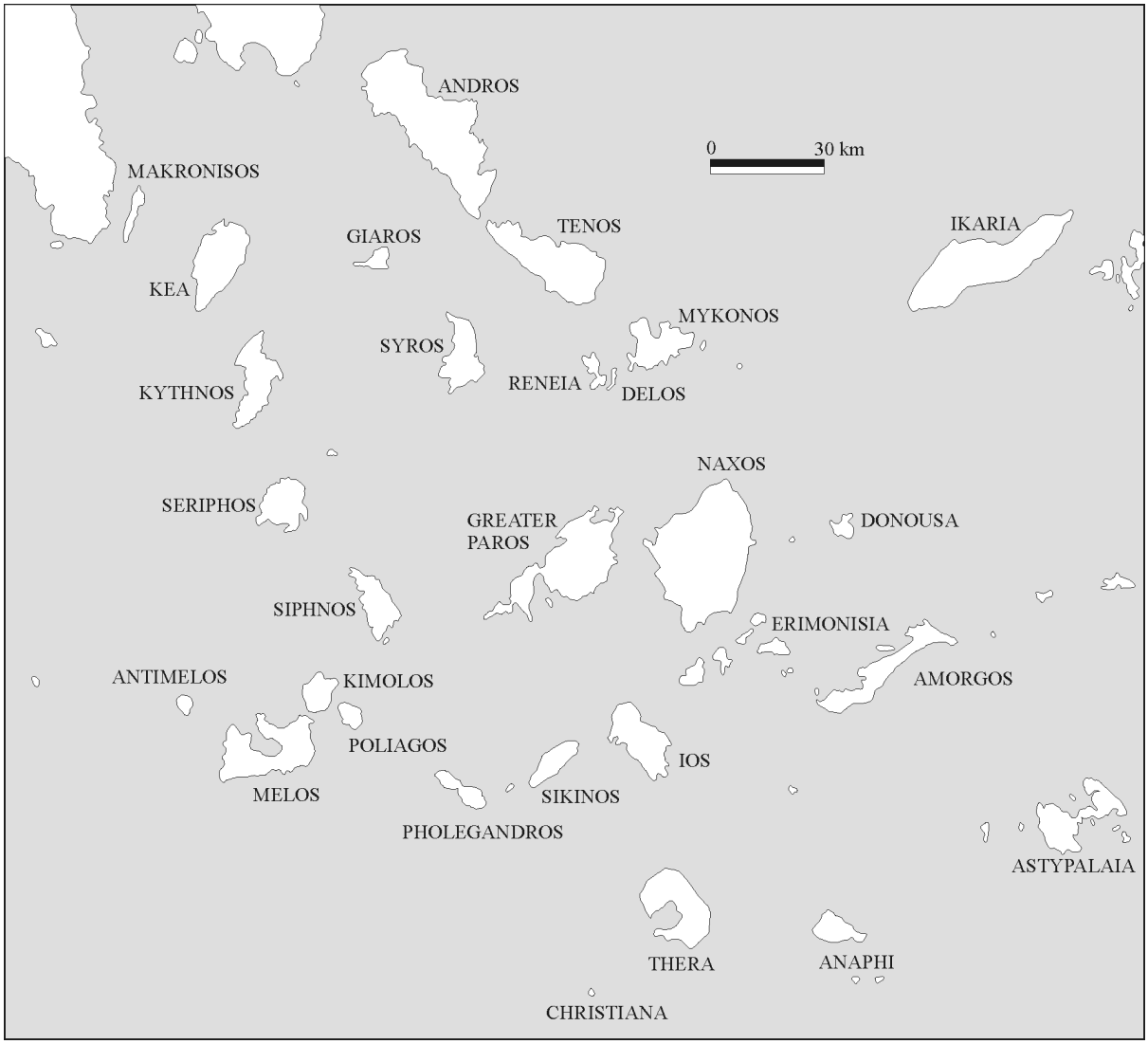

Figure 4. *The Cycladic archipelago*

The islands in the southern Aegean are generally considered as a distinct geographical unit. One of the chief aspects they have in common is their relative proximity to each other. On most islands it is possible to see several surrounding islands on all sides, especially during the summer months when the sky is sunny and clear. From Syros there is a clear view of the islands Andros and Tenos, Mykonos and Rheneia on the eastern horizon, and Seriphos, Kythnos and Gyaros on the western horizon. During optimal weather conditions the northern tip of Naxos and the island of Paros may also be observed. A similar situation is found on many other islands. Intervisibility may be under-

punishment was considered to be the equivalent of the death penalty. A marble slab with a Roman iscription is published in the *Inscriptiones graecae* XII, 10, 651. Gyaros has received a bitter name during the recent history of Greece, when it served as a place of exile for many political prisoners during the civil war, and during the military dictatorship between 1967 and 1974. Today the island is practically deserted save for an occasional visiting fisherman or shepherd attending his flock of sheep. See also Tournefort (1717), I, 344; Kolodny (1974), 447-49; Meynaud (1965), 177; *Le Monde*, (29/6/1967).

stood as an important unifying aspect in the socio-political and cultural cohesion of the Cyclades during various periods in history. The seas surrounding each island in the southern Aegean Sea should not be regarded as an isolating factor or boundary, but rather as a network of sealanes facilitating communication and regular contacts. It is within this context of tightly knit islands and adjacent coastal areas bound together by the sea that we must examine the island of Syros. Although each island, especially the larger ones, will have particular local cultural histories, all are in varying degrees part of a maritime world which, depending on the prevalent political situation, was closely interconnected by the sea.

In the modern era Syros belongs to the administrative district of the Cyclades and forms together with the islands of Mykonos, Rineia, Delos and Gyaros the eparchy of Syros. The town of Ermoupolis on Syros is the seat of the nomarch of the Cyclades and also of the eparch of Syros. Ano Syros, the medieval village of Syros, is the seat of the Roman Catholic bishop of Syros, Melos and Santorini. The metropolitan bishop of the Greek Orthodox Church of the Cyclades resides in Ermoupolis. The present population on Syros numbers approximately 17,000 people, of which a large percentage follow the Roman Catholic rite, making Syros one of the few places in Greece with a large minority of non-Orthodox inhabitants. The island of Tenos is the foremost Roman Catholic island in the Cyclades, while important minorities of Catholics live on Naxos and Santorini, other islands of the Cyclades.[80] The origins of this unusual situation go back to the long period of Venetian and Frankish rule of many of the islands during the 13th to 17th centuries.[81]

1.4.1. Climate and water supply

The climate of the Cyclades resembles that of the eastern regions of Greece, modified by insularity. Syros lies within the Mediterranean climate region dominated by dry warm summers and mild rainy winters. Three seasons may be distinguished in this climatic zone: a mild spring season of flowering and ripening from March to June, followed by a dry, hot summer from June until October, and a wet, cold winter season from October to March. The annual precipitation amounts to 487.4 mm spread over 64.8 rainy days. Most of the rainwater falls during the winter months (January - 102 mm, and 11.6 rainy days). During the three summer months only 8 mm falls, with July as the most arid month (0.8 mm and 0.3 rainy days). The average monthly temperature is 18.5 degrees Celsius, varying between 26.6 degrees Celcius in the summer months and 11.4 degrees Celcius during the winter months.

Record extremes in these temperatures were - 2.0 degrees Celcius for January and 40.0 degrees Celcius for July. The total number of sun hours is 2,817 hours a year, of which 410 are in the month July alone. On average there are about 1.3 days per year of frost, and slightly over 1.6 days of snow. The mean annual relative humidity throughout Greece lies between 60% and 75%, but there are strong seasonal and diurnal variations. On Syros the relative humidity has an average percentage of 68.8, ranging from 72.9 in December to 52.4 in July. Thunderstorms occur mainly during the winter

[80] See Kolodny (1974).
[81] For more details concerning these periods, see Miller (1964); Slot (1982); Lock (1995).

Table 1. *Climatic data, Syros* [1]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean monthly temperature degrees Celcius(1900-1929)	11.4	11.6	13.1	16.2	19.9	24.1	26.6	26.5	23.5	19.9	16.1	13.1	18.5
Mean hours of sunshine	107	115	173	228	281	361	410	385	301	212	134	110	2817
Average monthly rainfall (mm) (1894-1929)	102.4	66.2	48.4	26.5	17.3	4.9	0.8	2.6	8.9	14.5	75.2	92.6	487.4
Number of Raindays[2] (1894-1929)	11.6	9.8	7.6	4.6	4.2	1.3	0.3	0.4	1.4	4.8	8.2	10.7	64.8
Relative humidity (1900-1929)	70.3	69.4	67.3	64.4	60.8	57.3	52.4	54.7	60.0	67.5	71.8	72.9	68.8
Average number of thunderstorms per 1000	31.2	25.9	22.6	7.8	20.4	5.6	6.5	7.5	12.2	36.6	40.0	46.2	22.6
% Days of frost (1900-1929)	0.8	1.4	0.1	0	-	-	-	-	-	-	0	0	0.4
% Frequency of days on which snow falls	5.2	1.9	3.7	0.6	-	-	-	-	-	-	0.1	0.1	0.5

[1] After British Admiralty Handbook, Greece, vol. I, pp. 481, 484, 489
[2] A rain day is one on which more than 0.1 mm of rain falls.

months, mostly accompanied with heavy torrential rainfall.[82] Climatic data for Syros are presented in table 1, based on the information in the British Admiralty Handbook on Greece (1944). The period of observation falls between 1894 and 1929. All data were taken from the meteorological station based on Syros.

The marked relief of many Cycladic islands have strong effects on local climatic variations in temperature, rainfall, and wind. Duration, force, direction, and regularity of winds are important factors in local agrarian economies. Especially the strong, dry etesian winds blowing from the North, make cultivation in certain exposed areas almost impossible. These etesian winds blow regularly from the colder areas of the Black Sea and the Asian continent. They bring cooler air into the Aegean area. From May to August the strong Meltemi blows, sometimes with very high velocities in the Cyclades. These winds can seriously hinder modern sea traffic, forcing even larger ferries to stay in the ports for some days. The winds usually begin in the morning, increasing in force in the afternoon, and dying down again in the early evening. The average annual wind force is about 3.0 Beaufort.

Most of the islands in the southern Aegean are fairly rich in water springs of varying quality and quantity. Some are used as spas or health sources (*e.g.* Loutra on NE Kythnos). The water supply on Syros is mainly fed through three means. First the periodic rainfall during the winter months. Most of this rainwater flows through streambeds to the sea. Only a small amount is contained in the soils, mainly in the relatively flat areas in the southern part of the island. There are no perennial streams on Syros. During the long arid periods of the year these streambeds are dry. A second means of supply comes from the few water sources which are either seasonal or all year round. Most of the water sources are in the southern part of the island. The water was until recently hauled up from wells by animal driven pumps; today motorised pumps are used instead. A large perennial spring of good quality lies in the Syringas hills in the northeast. Today this water is brought to the town of Ermoupolis and sold in bulk to households and restaurants. Another famous spring lies on the lower northern slope of the hill of Ano Syros. The Agios Athanasios spring was visited by many travellers staying on Syros in the eighteenth and nineteenth centuries. Several old engravings show the picturesque setting of this spring which was the main water supply for the inhabitants of the old village of Ano Syros during the Medieval and early modern periods. A third source of water in modern times (and possibly also in previous periods) comes from cisterns in which rainwater is collected during the winter months. Most of these open basins of collected rainwater can be found in the coastal areas in the south. Although Syros has some good water sources there are not enough for the present population and the growing numbers of tourists in the summer months. Moreover, the increasing practice of pumping up water from deep sources for irrigation in agriculture results in a lowering of the water table in southern Syros. In some areas (*e.g.* Galissas) this causes severe problems of salination of coastal arable fields.[83]

[82] See British Admiralty Handbook, Greece, (1944), I, 481, 484, 489; Philippson (1959), 85; Stogianni (1972, 94) published some minor variations to these figures: annual precipitation - 498.2 mm; average temperature - 18.7 degrees Celcius.
[83] See Riedl and Kern (1981).

1.4.2. Geology

The geology of Syros has been investigated by a number of researchers from the mid-nineteenth century onwards.[84] A summary of these studies is found in the comprehensive account of the geology of Greece by Volker Jacobshagen.[85] There are some differences in the various published geological studies and descriptions of Syros, as well as in the geological maps and sketches. Most publications agree, however, on the general aspects of the geological formation and structure (fig. 5). The main body of the island consists of hard limestones, marble and metamorphic schists in alternating sequences, with in between metabasic gneiss, metamorphosed magnetic breccia and serpentine.[86] Stogiannis lists as the main rocks found in Syros hard limestone, amphibolite, glauconite and few soft limestone.[87] Melidonis and Konstantinides recognise three major successive layers or groups in the geological structure of Syros.[88] The lower two, the metamorphic group and the (meta)magmatic group, comprise about 90 per cent of the total landmass. These are divided into three series: lower, intermediate, and upper. The third group, the younger sediments, consists of beds of marl and of sand, and recent alluvial deposits. These are mainly found in the south. The tectonic structure of Syros consists of faults, folds and a few overthrusts. The directions of the major fault lines are northwest and northeast. The axes of the folds in the southern part run East-West and towards the north they change in a fan-shaped order, and turn North-South in the upper northwest part. The island is geologically famous for its glaucophane schists (glauconite). It was first described by Hausmann in 1845, and Syros is considered its *locus typicus*.[89]

The geological structure of the southern part is somewhat different from that of the northern part. Below an imaginary line drawn from Ermoupolis on the east coast to Galissas on the west coast, the land mass primarily made up of *Glimmerschiefern*, *Glaukophanschiefergneiss-Gneiss* and *Schiefergneissen*, with lenses of eclogite, gabbro, epidote, chlorite and serpentine. Over these formations lie partly dolomitised marbles. North of the line Ermoupolis-Galissas an alternating sequence of crystalline schists and marbles lies across the schist lower structure. The limestone-marble formations are of great importance for the understanding of the morphogenesis of the landscape in both northern and southern Syros. The geomorphological processes in both parts of the island have resulted in different landscape formations, and in the way human inhabitants have made use of these different landscapes. Thus, the present-day landscape of Syros is the result of the particulars of the relationship between the geological structure and geomorphological processes. Human interference, such as agriculture and the construction of roads, also have a strong influence on these landscape formation processes. The basic fact which structured human settlement in the island landscape lies in the difference between the northern and the southern morphology of the island. Each has a particular geological structure and is accompanied by characteristic geomorphological processes. In general terms we may state that the southern part is more suitable for human occupation and intensive land use than the northern part. Nevertheless, we can observe a large

[84] Boblay and Virlet (1833); Hausmann (1845), 193-98; Dixon (1976); Melidonis and Konstantinidis (1979).
[85] See Jacobshagen (1986), 133-35, with extensive references to older literature.
[86] See Dixon (1976); Jacobshagen (1986), 133-35.
[87] See Stogiannis (1972), 94.
[88] Melidonis and Konstantinides (1979), 5-7.
[89] Hausmann (1845); see also Dixon (1976).

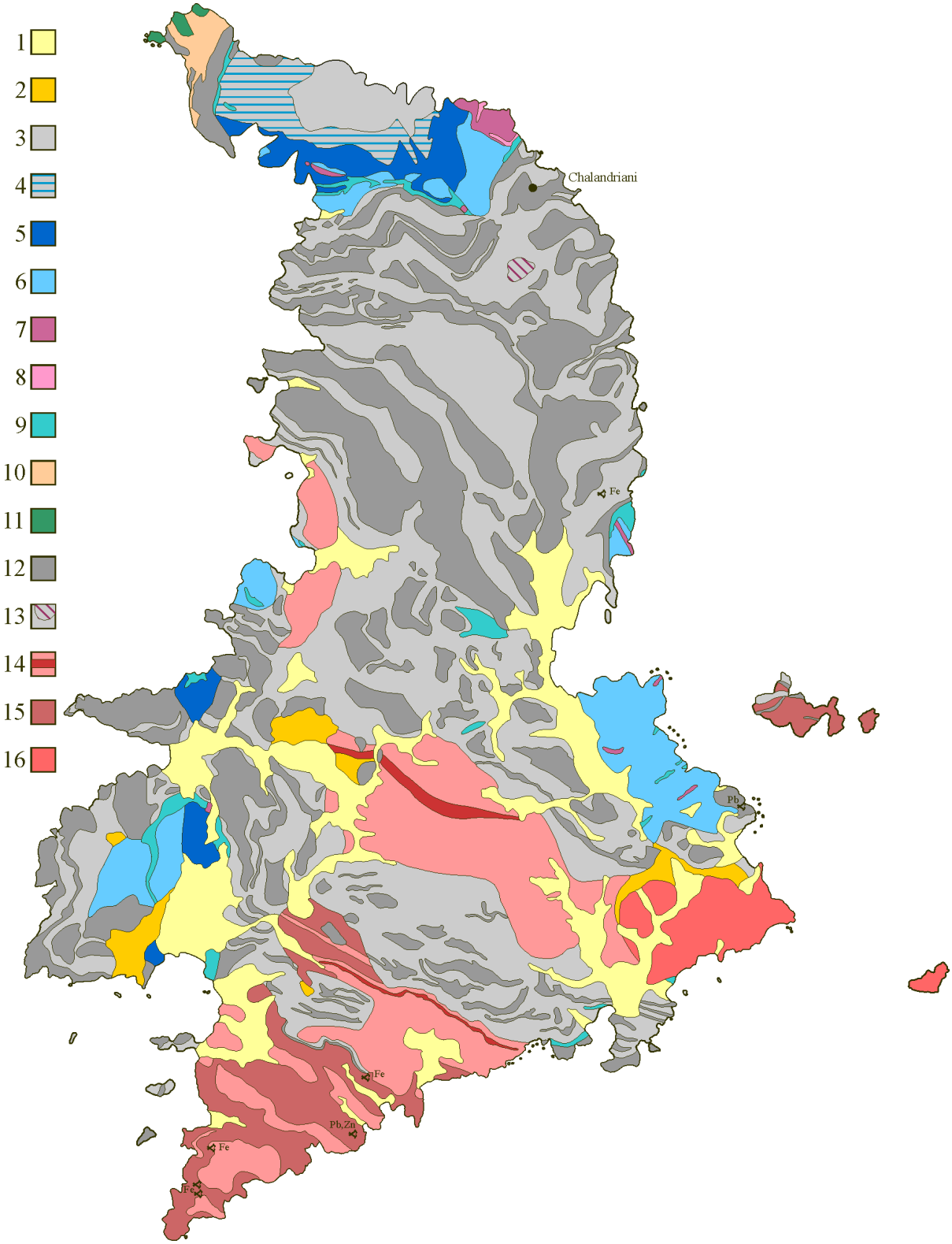

Figure 5. *The geology of Syros: 1. Alluvuim undifferentiated; 2. Scree (debris from marbles and schists); 3. Schists of Sikaminia; 4. Marble-Schist sequence of Palos-Payavles; 5. Schists of Kampos-Vaporia-Manna-Charassonas; 6. Metabasic schists of Kampos-Vaporia-Manna-Charassonas; 7. Metagabbrio; 8. Magmatic braccia; 9. Serpentine or chlorite schists; 10. Metamorphic conclomerate of Palos; 11. Meta-arkosic gneisses of Palos; 12. Marbles; 13. Schists of Syros; 14. Green schists and amphibolites; 15. Gneisses of Mavra Vounakia; 16. Gneisses of Vari (after IGME, 1985)*

number of major sites dating from the prehistoric periods in both the northern and the southern part. The locational choices of prehistoric inhabitants of Syros were thus not completely constrained by landscape characteristics.

Syros is not rich in mineral resources. Mineralised outcrops are found in the areas of Komito, Tourlos, Rozos, Vari, Azolimnos in the southern part, and near Agios Dimitrios and Armeno, north of Ermoupolis on the east coast. Both primary ore minerals (mainly pyrite, sphalerite, galena), and supergene minerals are found in these different areas. Various iron ores have been occasionally exploited in recent times. Most were not abundant enough for continued commercial exploitation.[90] Galena mines were opened for tests in the present century in the area of Komito in southwestern part, but were of limited economic interest.[91] A natural resource which has been exploited commercially is the marbles from the hill at Kastri.[92]

1.4.3. Soils

The soil mantle on Syros, as on many other Aegean islands, is rather thin, with few isolated pockets of soil on an otherwise rocky base of bedrock (fig. 6). More extensive stretches of deeper soil are only found in the southern part of the island. Four main soil groups are identified on Syros: Mediterranean Brown soils, Mediterranean Red soils (terra rossa), Alluvial soils, and Rendzina soils.[93] Within each group several variations occur, according to local circumstances (mainly the level of acidity). The Mediterranean Brown soils can be subdivided into the soils containing traces of $CaCO_3$ from the asbestite of the Glauconite, and Calcic Mediterranean Brown soils enriched with $CaCO_3$ through the precipitation of circulating hard waters. Terra Rossa is formed in small spots, such as clefts, in the hard limestone formations. Rendzina developed on soft limestone and also on some of the slopes and foothills. In southern Syros, especially in ravines and along the coastal areas, alluvial soils are formed. Near the shores these soils are heavily salinated through recent low ground water levels. These low lying stretches of arable land in the central area and the alluvial coastal valleys on the eastern and western coasts have been exploited by humans from the prehistoric period onwards.

In the northern part the practice of terracing has substantially enlarged the area of cultivable soils available. As of yet, the dates of the formation of these terraces in the north have not yet been researched. Some areas may well have undergone major geomorphological changes through human activities in the (pre)historic periods (*e.g.* the area of Lychero, Chalandriani and San Michalis in the northern part of the island).

[90] Boblay and Virlet (1833), 69-71; Fiedler (1841), II, 172-78; Philippson (1959), 81-87; see also Neumann and Partsch (1885), 234; for a recent geological study of the metallurgical resources on Syros, see Melidonis and Konstantinidis (1979).
[91] See Gale and Stos-Gale (1981).
[92] See Bossert (1967), 55.
[93] Stogianni (1972), 94-96.

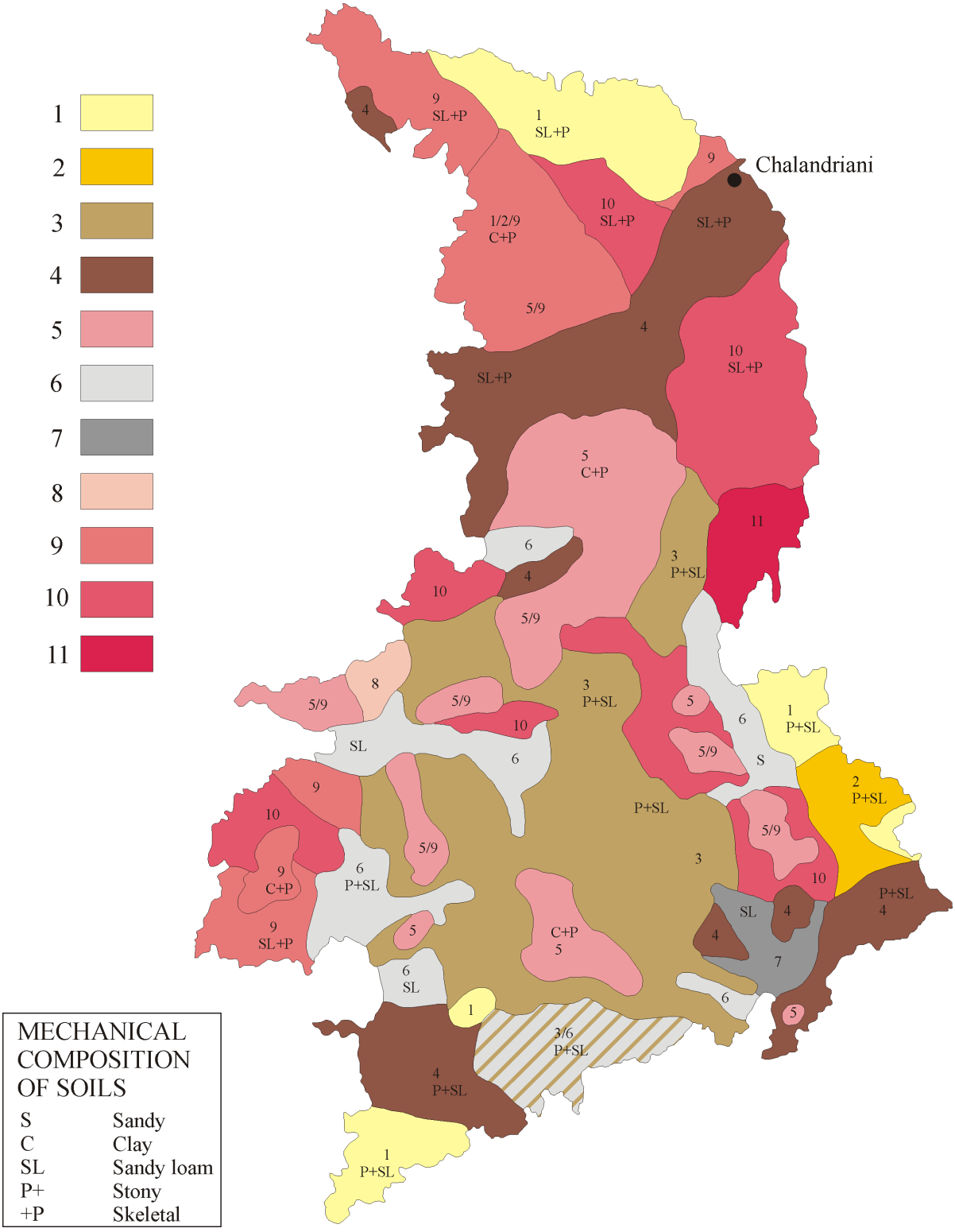

Figure 6. *The soils of Syros: 1. Mediterranean brown soils free of $CaCO_3$, slightly acid or neutral; 2. Mediterranean brown soils with traces of $CaCO_3$; 3. Calcic Mediterannean brown soils; 4. Mediterranean brown soils free and with traces of $CaCO_3$; 5. Red Mediterranean soils (terra rossa); 6. Alluvial soils with $CaCO_3$; 7. Alluvial soils saline and alkali; 8. Rendzina soils; 9. Rendzina soils as spots in cracks of hard limestone; 10. Rendzina complexed with calci Mediterranean brown soils; 11. Rendzina complxed with calcic brown Mediterranean and with brown Mediterranean soils with traces of $CaCO_3$ (after Melidonis and Konstantidinis, 1979)*

1.4.4. Vegetation

A large number of visitors to Syros have studied its plants and vegetation. One of the oldest references we have is from Tournefort, who as a botanist and antiquarian travelled in the Cyclades and on Crete between 1700 and 1701 and who identified more than 1,300 new species. On Syros he identified a rare and endemic variety of the crocus, which was later named after him (*Crocus tournefortii*). Important contributions to our knowledge of the plants of the Aegean came from the Austrian botanist Karl Rechlinger and his followers at the University of Lund in Sweden.[94] The Cycladic islands lie in the Mediterranean vegetation zones which is characterised by evergreens, and thickly leaved, wooded growth. This vegetation zone is divided into two ecological, botanical, and physiognomic subzones. The first, named *Quercion ilicis* (or ilex) is found in the moist areas of Greece (northern and western Peloponnese, western Mainland and Ionian Islands). On some of the islands of the Aegean it may be found in the sub-montane parts. The second subzone (*Oleo ceratonion*, olive and carob) comprises most of the southern and eastern areas of Greece (coastal areas of southern and eastern Peloponnese, Attica, parts of the Ionian Islands, Cyclades and Crete). It extends in the north up to the Pelion mountains and the northern Sporades. The climate of long, dry summers and short, rainy winters favours the development of xeromorph, 'warmth-loving', 'frost-sensitive' vegetation. In the Cyclades a strong degeneration of the wood vegetation is noticeable. The almost complete absence of thickly leaved trees and shrubs is characteristic of Syros as well of most of the other islands. It has been described as a degenerative vegetation, consisting predominantly of *phrygana*[95] (or *garigue*) vegetation, sometimes further degraded to *Felsheide*. Only in a few locations can a development towards true *macchie* be observed. The lack of perennial water sources and streams prevents the development of the hydrophilic *macchie* plants. *Phrygana* vegetation, as found on Syros, consists of xeromorphic, small shrubbery, mostly spheric in growth with reduced leave dimensions and thorny shoots. Depending on the relative density of the shrubbery, aromatic herbs and various grasses are usually found in between. These plants are mostly geophytes and theriophytes, which flower during the moist periods of the year and dry out almost completely in the hot summer months. The *phrygana* vegetation is both the result of the dry, stony hard surface of the terrain and of human actions, such as intensive grazing by sheep and goats. Characteristic species of the *phrygana* on Syros include: Poterietum spinosae (especially Rosaceae), Coridothumus capitatus, Genista acanthoclada, Satureia thymbra, Anthyllis hermanniae, Euphorbia acanthothamnus. Additional small shrubs include: Fumana arabica, Fumana thymifolia, Calicotome villosa, Salvia officinalis, Salvia trilobia, Teucrium divaricatum, Ballota acetabulosa, Micromeria nervosa, Phlomis fructicosa, Asteraceae Helichrysum stoechas ssp. italicum. Regenerative developments are sometimes observed when citrus, junipers and pistacia lentiscus are able to grow into higher shrubs or small trees creating a *macchie* vegetation. Nearly all vegetation on present-day Syros is secondary. Endemic species are sometimes found along the roads and paths, on deserted fields, or the ruderal areas especially in the northern part of the island.

[94] For a bibliographical review of botanical studies which include Syros, see Dimitropoulos (1989); Sarlis (1994).
[95] See Swartz (1981).

1.4.5. Geography

Syros (86 km^2) consists of a hilly northern part (above the line Ermoupolis-Kini) and a more gentle southern part. The distance between the northernmost point (Cape Tremisos) and the southernmost point (Velostasi) measures 17 km. The distance between points east and west varies. In the centre (roughly between Ermoupolis and Kini) this measures 5 km. Further south the distance between the easternmost point (Phokotrypes) and the westernmost point (Atsinganokastro) is about 10 km (see fig. 7). The mountainous northern part, or Ano Meria, has a marked relief with several summits: Palos, Panavlies, Schizomenes, Syringas (447 m), Stonychas, and Pyrgos (442 m). The relief consists of an elevated backbone which lies more to the east than to the west, arranged in concentric curving ranges. The higher parts lie close to the coast on the eastern side, while the western slopes are in general less steep and more gentle and terminate into numerous rugged promontories which enclose bays and coves. These bays along the western coast are much smaller in the northern part, approximately 500 m in width (*e.g.* Grammata, Megas Lakkos, Aëtos, Barbarousa, Delphini, Kini), while in the southern part they are roughly 1 km wide (Galissas, Poseidonia/Phinikas). All of these bays are connected through ravines with the higher areas in the centre of the island. The northern part of Syros is more or less asymmetrical in morphology. In the northwest plateaus and gentle slopes with steep cliff-like shores can be found, while in the northeast there are many ravines and deep crevices. The coast on the north and northeast curves erratically from Cape Tremisos to Ermoupolis. Only a few small bays are found along this stretch of coast (*e.g.* Kleisoura, Loula). The western coast, down from Cape Trimeson, is broken into a series of small sandy bays by headlands. The southern part of the island, Messaria, has a more gentle terrain and a few mountain ridges, mostly along the southern coast and in the southwest (*e.g.* Glarontas, Volakas, Charassonas, Gerousia, Nites). Plains in this part include both coastal (Galissas, Phinikas, Poseidonia, Vari) and inland plains (Manna). The southeast coast has only one natural harbour (Ermoupolis) while further south lies the bay of Azolimnos. Along the southern coast we find some smaller bays and promontories (Achladi, Megas Gialos).

Sheltered, deep bays (between 40 and 70 m), safe for anchoring a boat or ship, are primarily located along the western coast, like in many other Cycladic islands.[96] On the east coast, the only safe haven is the bay of Ermoupolis. This wide natural harbour is protected by two small islets (called Didyma), the largest of which (Giadaros) has a lighthouse. The bay measures roughly 1 by 1.5 km and has a depth of 38 m at the mouth. A sandy beach lies on the southwestern side. The southern coast has a few other small haven (Vari, Megas Gialos, Tria Lankonia). The main harbour of the island is that of Ermoupolis. Ships have been dropping anchor here ever since Classical times. The ancient town of Syros was located on the shore of this harbour. Two other harbours were also used in ancient times. The bay of Grammata was used as a shelter from fierce northerly storms during the Late Roman and Early Byzantine periods. Numerous inscriptions seeking divine

[96] See Radspieler (1982), 68-83.

Figure 7. *The modern-day geography of Syros: relief, settlements and communication*

protection attest to this on the exposed rock surfaces.[97] The wide and sheltered bay of Phinikas in the southwest, bears indications of ancient harbour facilities which may have once existed here.[98] The bay of Galissas may also have been an important natural harbour in ancient and medieval periods.[99] The sandy beach and the fertile plain behind it were probably settled from prehistoric times onwards. Several small islets, rocks and shoals on the western and southern coast make this sea dangerous for sailing, as attested by several shipwrecks, especially near the Aspronisi (southeast of the island) and near Nata (7 km ESE of the main island).

Due to the different geological structure and geomorphology, the two parts of Syros have a different landscape. The northern landscape is characterised by an almost absence of plains and valleys (fig. 8 *above*). The area consists of steep slopes, high plateaus and few natural lines of communication. Many coastal areas are difficult to reach over land. Dry streambeds dissect the land, creating deep ravines and slopes, and making communications over land difficult. Few roads have been constructed. There are several mule paths following the contours of the terrain. Most are in poor condition nowadays and are not maintained. Prior to the construction of the asphalt roads, these paths were the only means of access to this northern part of the island, unless one travelled by boat along the coast. Most villages and hamlets are located near one of these paths. Although the landscape looks barren, it is not completely deserted. In many parts traces of human occupation can be found (*e.g.* field walls, terracing, bee hives, *mandras* or sheep folds, wells). These indicate that most if not all of the countryside is, even nowadays, still used for some purpose or another. On several higher summits chapels have been built which serve as markers in this rough landscape and which are used annually during Saints feast days.

In the southern part of Syros the landscape is quite different (fig. 8 *below*). Here there are gently rolling hills, large fertile valleys, and occasionally higher summits. Alluvial plains are found near the coast at various locations. Communication is relatively easy in this part, and an extensive network of asphalt and unmetalled roads connect the many villages. Settlements are much larger here and more densely distributed. On most of the higher places chapels and churches have been built that can be seen far and wide. The relief of the southern part creates some natural subregions. Clockwise there are the plains and valleys of Manna, Ateliou, Episkopiou, Chroussa, Galissas, Phinikas, and Poseidonia. Due to its exposed character the southern part was probably less extensively inhabited during times of widespread political and social unrest in the Aegean history. During such times the sheltered and more difficult to traverse areas in the northern part of Syros offered better protection. Evidence of extensive older terraces in the northern part may be the remains of such medieval and early modern refuges from the exposed coastal settlements. The modern period (*i.e.* after the 1820s) favoured settlements in the southern part, which were more easily reached. Their larger tracts of arable lands could be cultivated more easily. At the same time the northern part grew depopulated,

[97] Horden and Purcell (2000), 440, 628-29.
[98] Ross (1841); Lehman and Hartleben (1963[1923]), 282, no. 272.
[99] From 1994 onwards excavations were carried out by the Ephorate of the Cyclades; see also Manthos (1979).

Figure 8. *Characteristic views of the landscape in northern Syros towards the Bay of Grammata in the northwest from Syringas (above) and in southern Syros towards the west from Parakopi (below)*

Figure 9. *Hillslope terraces in northern Syros with (above) white washed chapels and small farmsteads surrounded by fieldwalls near Kyperousa and (below) on the northern slope of the promontory of Chalandriani seen towards the east*

terraces were no longer maintained and the network of paths was abandoned. It is quite clear from the archaeological and historical evidence that the present day situation in Syros is in no way representative of older periods. The whole island seems to have been settled during most periods, instead of the concentration of habitation in the southern part that we see today.

1.4.6. Land Use and Agriculture

The differences in terrain between the northern and the southern part have a marked effect on both the traditional and modern land use patterns. Modern land use and their effects on the landscape and relief has been studied by team of geographers from the University of Salzburg in 1981. Central to these investigations were agricultural geographical, geomorphological and urban geographical studies.[100] Another geographical study, carried out by Eggerling in the 1980s, dealt with the modern communication network and the changes in the landscape during the modern period.[101] Both studies present clear evidence of the changes in the rural settlement and land use patterns on Syros during the modern period.

In the northern part many terraces have been constructed, used for vines and fruitbearing trees, and small patches of grain (fig. 9), while in the southern part more extensive cultivation of larger tracts of land is possible. Cultivated fields in the northern part lie approximately 200-300 m higher than those in the southern part. This has an effect on the time of harvest. In the northern part vines and other products ripen about two to three weeks later than in the south. Cultivation in the northern part is confined to narrow terraced plots. These small fields are worked extensively with fallow periods of several years. The dimensions of the cultivated fields show a marked variation between the north and the south. Fields in the south may be as large as 5000 m^2, while the northern terraced plots rarely exceed 10 m^2. No regular arrangement of fields can be observed in the south, and fields of varying dimension and slope lie scattered around the settlements. The terraced slopes in the north show some organising principle, with alternating terraces of different kinds and various other structural facilities constructed in between (*e.g.* outhouses, stables, sheds, wells).

Taking the island as a whole we can observe several stages in the manner of agricultural exploitation along a vertical axis, stretching from the lowest parts of the landscape up to the higher summits. Irrigated fields and greenhouse cultivation are found on the lower and more level parts of the landscape. Along the foothills of the lower hills, non-irrigated cultivation and some terraces can be found with vines and other tree crops. Higher up the hills and mountainous slopes, where the soil cover is extremely thin and vegetation more dispersed, herds of goats and sheep are grazed. Today large flocks are no longer kept and small groups of only a few animals are seen grazing in the northern area. Extensive cultivation of vines, cereals (barley and wheat) and figs are found on the middle and upper terraces. In areas of approximately 100 m in altitude many small vineyards can also be observed. These are not cultivated for commercial purposes, but only for domestic or local production. The higher landscapes are covered with *phrygana*-vegetation. Due to the abandonment of several fields, the *phrygana*-covered grazing grounds are slowly supplanting the areas of extensive

[100] Riedl and Kern (1981).
[101] Eggerling (1984).

Table 2. *Modern land use on Syros* (after Sarlis 1994, 99)

Land use	Stremmata	Percentage
Irrigated	2,500	14.9 %
Thermokipia	450	2.7 %
Open air/aboriculture	1,300	7.7 %
Barley and Avenum	7,000	41.8 %
Various other crops	2,500	14.9 %
Fallow land	3,000	17.9 %
Total cultivated	16,750	
Total land surface	86,000	
Percentage cultivated	19.47 %	

cultivation on the middle and upper terraces. In contrast to these areas, the flat coastal terrains and the connected valleys are characterised by large and intensively cultivated fields, partly irrigated, with cash crops. Especially cucumbers and tomatoes are increasingly produced in *thermokipia* (greenhouses covered with transparent sheets of plastics). Such makeshift greenhouses are mostly found in the coastal areas of Galissas, Phinika, Mega Gialos, Vari and Manna. The widespread use of irrigation, together with a growing tourist industry and the use of irrigation of grasslands for animal fodder, has put strong demands on the local water supply, which has resulted in the gradual salination of the soils in these coastal areas. The animal fodder (*i.e.* hay) taken from the irrigated grasslands is used for feeding larger animals kept in stables, such as Frisian milk cows. Thus we see a marked contrast between the lower terrains with intensive agricultural exploitation in southern Syros on the one hand, and the extensive use of the higher lying terrains of the southern and northern parts of the island. The cultivation of olives is of minor importance in the south, but is much more prevalent on small terraces in the north. In table 2 the total areas used for certain agricultural practices are presented and the percentages of different agricultural land uses are calculated.

The cultivation of crops, mostly cereals (*Hordeum* and *Avena*), take up more than 40 percent of the available arable land. These are found for the most part in the southern half of the island. Horticulture is confined to the flat and well-watered coastal areas in the south. Extensive grazing on fallow land takes 17.9 percent of the total land use and is found in areas above approximately 200 m. Also vines and the cultivation of olives and figs (arboriculture, 7.7 %) is located on higher grounds, mostly in the north. Of all the land used for agriculture, more than 14.9 per cent is subject to irrigation. This practice is only found in the south, specifically in the coastal areas in the southwest. Of the total land surface of the island (86,000 stremmata) nearly 20 per cent is brought under cultivation. The remaining land is occupied by wastelands, settlements, roads, rocky areas, beaches or shores, and wooded areas. Of the total population of about 20,000, nearly 750 families are involved in agriculture, 60 % of which depend upon the land for their income. Nearly 80 percent of the annual gross produce from agriculture comes from the cultivation of crops and trees, the remainder (20 %) from husbandry. On Syros there are about 600 cattle and more than 4,000 heads of sheep and goat. Together these animals produce 1,800 tons of cow milk, 60 tons of goat milk, and 40 tons of sheep milk. All dairy products (pasteurised milk and cheese) are processed through

the agricultural corporation BIOSYR. Meat production on Syros amounts to 200 tons of beef and pork, and 90 tons from sheep and goat.[102]

These variations in land use and agricultural production should not be viewed in terms of higher or lower economic values, but rather as interrelated and complementary parts of an insular land use system, wherein the combined use of different aspects of the terrain result in a variegated production. The modern techniques of cultivation and the production of crops largely for an external market (Athens, EU), together with the development of motorised irrigation and the use of artificial fertilizers has changed agricultural practices radically in the south compared to the more traditional patterns. In the north these changes are far less noticeable and the countryside still presents a more or less traditional Cycladic system of settlement and land use.

1.4.7. Settlements and Population

The northern part of Syros is characterized by remaining settlement structures and patterns of *monospitia* (isolated farmsteads and houses), usually built in vernacular architectural styles of local building material (*e.g.* stones and wood) and second-hand parts, such as windows, doors etc. These *monospitia* generally consist of scattered buildings around an open court with low walls around. A dove house, threshing floor, oven, stable, living quarters and a toolshed make up this traditional agricultural compound. These agricultural compounds are grouped in a loose arrangement into small settlements, which lie scattered across the landscape of northern Syros, called *Ano Meria*. Few roads or paths exist and only a few of the settlements are inhabited all year round. Most are what has been called *Aussensiedlungen* (or *exochae*).[103] The inhabitants only live in these *monospitia* during the summer months. Most are residents of the village of Ano Syros, where they live during the winter months.[104]

The habitation and cultivated terrain of northern Syros is concentrated in and around seven hamlets, each with its own system of terraced fields and outlying grazing lands. All lie between 200 and 350 m above sea level, and consist of several traditional agricultural compounds spread over a wide territory: Platos, Plati Vouni, Chalandriani, Kambos, San Michalis, Kiperousa, and Mitikas. This northern part of the island shows a carefully conserved traditional *Kulturlandschaft*. Although many inhabitants have left for Ermoupolis or Athens, the terrace walls are generally still maintained in good condition, and several fields are cultivated. At many locations within this landscape we can see white-washed chapels, mostly belonging to the Roman Catholic rite. Access between these rural areas is limited to only a handful of paths and a main metalled road leading from Ano Syros to Kampos.

[102] These figures are taken from Sarlis (1994), 99, and are based on statistics from the Directorate of Agriculture of the Prefecture of the Cyclades. They are at variance with the figures published by Kolodny in 1974, 245. In seems that agricultural practices have undergone some changes in the last 20 years. No figures are avialable to estimate the extent of terracing on Syros and the production from these fields; see also Perdicoulis & Power (1995).
[103] Rield (1981).
[104] Philippson (1959, 85) counted about 55 settlements of various dimensions outside the town of Ermoupolis, with an average population of 88 people.

Table 3. *Population history of Syros*

Date	Population	Source
1424	400	Chr. Buondelmonti (Legrand 1897)
1494	400	Fransesco Lupazzolo (Sathas 1884, VI, 241; Slot 1982, 281)
ca. 1500	550	I Diarii de Marino Sanuto (1496-1533) (Fulin et al.1897-1903)
1535	500	Capitulations between Francois I of France and Sultan Soulaiman (Drakakis 1990, 3)
1563	deserted	Eggeling (1984), 329
1616	3,000	Eggeling (1984), 329
1624	4,000	Eggeling (1984), 329
1630	3,100	Eggeling (1984), 329
1638	3,000	Francesco Lupazzolo (Hasluck 1910-11, 153-54)
1667	4,100	Eggeling (1984), 329
1687	*ca.* 5,100	Eggeling (1984), 329
1700	2,981	Eggeling (1984), 329
1702	2,980	Kolodny (1970), 255
early 18th c.	6,000	abbé Della Rocca (1790)
1771	1,000	Pasch van Krienen (Ross 1840, 7, note 9)
1808	6,000	Aynés (1808)
1828	20,197	Kolodny (1970), 255
1834	16,943	Kolodny (1970), 255
1848	24,502	Kolodny (1970), 255
1853	24,652	Kolodny (1970), 255
1856	20,974	Kolodny (1970), 255
1861	23,078	Kolodny (1970), 255
1870	26,480	Kolodny (1970), 255
1879	26,946	Kolodny (1970), 255
1889	31,573	Kolodny (1970), 255
1896	27,756	Kolodny (1970), 255
1907	27,325	Kolodny (1970), 255
1920	24,596	Kolodny (1970), 255
1920/22	24,388	Eggeling (1984), 329
1928	28,664	Kolodny (1970), 255
1928	27,663	Eggeling (1984), 329
1931	29,043	Eggeling (1984), 329
1940	25,921	Kolodny (1970), 255
1951	23,130	Kolodny (1970), 255
1961	19,573	Kolodny (1970), 255
1971	17,982	Eggeling (1984), 329
1978	*ca.* 20,500	Eggeling (1984), 329
1981	*ca.* 20,900	Eggeling (1984), 329

In the south part the settlement pattern may be compared with the *polis*-model in antiquity.[105] It is characterized by an almost complete concentration of all functions (industrial, commercial, recreational, administrative, ecclesiastical) inside the town of Ermoupolis. The town is connected to most of the outlying rural settlements through a network of asphalted and unmetalled roads. These settlements in the south are characterised by extensive scatterings of houses, sometimes

[105] Riedl (1981), 19.

arranged loosely around a church, such as at Phinika, but more generally with no apparent concentration at all (*e.g.* Mega Gialos). The villages are surrounded by isolated compounds (*exochae*). Shops and kafeneions are absent in many of the villages and hamlets in Syros. Residents must go to Ermoupolis for practically everything they need. Products are brought to and bought at the market or shops in the main town, which functions a central place within the island economy.

This settlement pattern is reflected in the spread of the present-day population on Syros. Most people live in the town of Ermoupolis and the nearby medieval village of Ano Syros. Coastal villages on the southern and southwestern coast have a population of a few hundred people, while the hamlets in northern Syros have an almost exclusively seasonal population who reside there only during the summer months.The area of Poseidonia/Dellagrazia has a large number of summer homes of the more wealthier inhabitants of Ermoupolis. This modern pattern of population spread is the result of an urbanisation process, starting in the second quarter of the nineteenth century. During the final years of the war of Independence, large numbers of refugees from islands in the eastern Aegean arrived on Syros. At first many lived in huts and temporary constructions near the coast below the medieval village of Ano Syros. After a few years a new and large town, Ermoupolis, was built in this area. The town was called after the ship *Hermes* which brought many of the refugees from Chios and Psara to Syros.[106] It was during this periode, the first half of the nineteenth century, that Syros reached its zenith of economic and cultural life, when its harbour was the foremost in Greece. The port of Ermoupolis was a major trading market in the Eastern Mediterranean world, lying at the maritime crossroads of east-west trading routes.[107] Before 1820 the population of Syros varied, according to local and external circumstances, between 3,000 and 5,000 people. In the middle of the nineteenth century, this number had grown to 25,000 (see table 3). When divided according to religious affiliation we see that the new arrivals on Syros were all Greek Orthodox, while the number of Roman Catholics remained more or less stable. Recent figures of population numbers on Syros are therefore not suitable for comparisons with antiquity. Only pre-1820 numbers form a base on which suggestions regarding the number of inhabitants during prehistoric and Classical to Roman periods can be founded.

Syros played a key role in the trade relations between the West and the Levant. Its harbour facilities, such as the quarantine station, telegraph office and thriving commercial and banking houses, made it a regular port of call for nearly all ships sailing to the eastern Mediterranean. With the arrival of coal steamers, Ermoupolis became a principal bunker place to load coals before continuing the voyage through the newly opened Suez Canal to the Far East. In the second half of the nineteenth century, Ermoupolis became the first harbour in Greece. The opening of the Corinth Canal in 1893 was to become the downfall of the harbour of Ermoupolis. Within a few years, the harbour of Piraeus took over the prominent position in Greek shipping and trade. Quarantine regulations were less strict, allowing people and goods to move more freely between East and West. Quarantine stations like Syros became obsolete. Until the Second World War, Ermoupolis could still be seen as a prosperous and industrial town. After the 1950s things changed rapidly in Greece. The growing importance of the port of Piraeus, at the expense of Ermopoulis and other places, resulted

[106] Travlos and Kokkou (1987).
[107] See the study by Kardasis (1987) concerning the spectacular growth of the town of Ermoupolis as the largest commercial harbour in Greece during the second half of the 19th century.

in the loss of much shipping activities and associated industry. The depopulation of the Greek countryside and the pull of the cosmopolitan life in Athens accelerated the process of desertion in many rural areas. On Syros this process has been much less devastating than in other islands, possibly because of its regular ferry service to Piraeus, and the fact that the town of Ermoupolis, as capital of the nome of the Cyclades, houses various government offices.